

**Albuquerque BioPark:
Creating Cultural Corridors and
Social Landmarks in the Landscape**

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Comprehensive Creative Project: Albuquerque BioPark: Creating Cultural Corridors and Social Landmarks in the Landscape

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Abstract/Overview

This creative project develops a master plan for cultural/art corridors leading into the Albuquerque Biological Park and designs a site-specific community/social landmark, with precedent studies and schematic sections. Evolved from these scattered pieces of municipal projects over time, the 120-acre BioPark includes the Aquatic Park (2.5 acres, 1995), Rio Grande Botanical Gardens (16 acres-1996), Tingley Beach (18 +/- acres, 1930's W.P.A.), and the Rio Grande Zoo (63 acres-1927). These facilities have become a citywide community presence for all Albuquerque residents, but much progress remains to be made in this economically and culturally divided city. Since losing the Alvarado Hotel in the 1970s, Albuquerque's citizens have not had a "Lynchian" landmark to identify with that also strikes a balance between community needs and tourism profit margins. To address these challenges, this project seeks to answer two questions:

1. How can Lynchian design principles help fill a cultural void in Albuquerque's urban fabric?
2. How can landmarks enhance existing cultural corridors (Route 66, Rio Grande River, Mountain Rd., Rio Grande Blvd., 2nd St., and El Camino Real)?

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Table of Contents

Abstract/Overview.....	i
Acknowledgements.....	ii
Table of Contents.....	iii-iv
Table of Plates.....	v-vi
Table of Figures.....	vii-ix

Chapter 1 Introduction

Regional Background.....	1
Community Background.....	2
ProjectSiteBackground.....	11
ProblemStatement.....	12
Methodology.....	17
Assumptions.....	19
Delimitations.....	19
Significance.....	20

Chapter 2 Additional Contextual Background

Definitions.....	22
Stakeholders and User Groups.....	27
Governmental Agencies (Federal, State, County, and City).....	28
Tourism.....	32
Mystique of the West.....	38
The Art of the West.....	44
Landscape Theories Regarding Landmarks, Community Identity, & Narratives.....	48
Placemaking.....	50
Placemaking in New Mexico (Center Place, Plaza, and Square)...	53
Landscape Architectural Design Approaches and Composition.....	56
Cultural Corridors (El Camino Real, Railways, and Route 66).....	60
Cultural Connectivity Through Public Art.....	61
Recreational and Environmental Corridor.....	64
Environmental Concerns.....	65
Governmental Planning Documents.....	67

Chapter 3 Case Studies

Botanicalgardens.....	70
Carousels.....	75
Environmental corridor systems.....	82
Architecture alternatives.....	89

	Public Spaces.....	93
	Public art program.....	99
Chapter 4	Inventory and Site Analysis	
	Demographics.....	103
	General Characteristics of Albuquerque.....	105
	BioPark Location and Site Boundaries.....	108
	General Characteristics of the BioPark.....	109
	Vehicular Circulation and Access to the BioPark.....	110
	Mass-Transit.....	112
	Recreation Use/Trails.....	113
	Adjacent Land-Use to the BioPark.....	115
	Environmental Conditions.....	119
	Public Art Program.....	119
	Site Analysis Recommendations.....	120
Chapter 5	Planning and Design Recommendations	
	Goals, Objectives, and Programming.....	126
	Master Planning.....	130
	Conceptual Diagrams and Drawings.....	132
	Project Phasing.....	147
Chapter 6	Conclusion	
	Works Cited.....	153
	Works Consulted.....	167
Appendix		
	Appendix A: Maps and Drawings Plates	

Table of Plates

(Appendix A)

Plate 1:	Western Mystique Context Map
Plate 2:	Pieces of Public Spaces Map
Plate 3:	Downtown District Map
Plate 4:	ABQ Ride System Map for Buses
Plate 5:	Overall Bicycle Map
Plate 6:	Detailed Bicycle Map
Plate 7:	Paseo del Bosque Trail Map
Plate 8:	Overall Public Art Map
Plate 9:	Detailed Public Art Map
Plate 10:	Existing Contextual Photos--San Gabriel State Park Area
Plate 11:	Existing Contextual Photos--Biological Park Area
Plate 12:	Existing Contextual Photos--Biological Park Area
Plate 13:	Existing Contextual Photos--Biological Park Area
Plate 14:	Existing Contextual Photos--Country Club Area
Plate 15:	Existing Contextual Photos--Tingley Beach Area
Plate 16:	Existing Contextual Photos--Rio Grande Zoo Area
Plate 17:	Existing Contextual Photos--Rio Grande Zoo Area
Plate 18:	Inventory and Analysis--San Gabriel State Park Area
Plate 19:	Inventory and Analysis--Biological Park Area
Plate 20:	Inventory and Analysis--Country Club Area
Plate 21:	Inventory and Analysis--Tingley Beach Area
Plate 22:	Inventory and Analysis--Rio Grande Zoo Area
Plate 23:	Design Influences Diagram
Plate 24:	Cultural Corridor Context Analysis

Plate 25:	Cultural Corridor Network Master Plan
Plate 26:	San Gabriel Park Area Master Plan
Plate 27:	Biological Park Area Master Plan
Plate 28:	Country Club Area Master Plan
Plate 29:	Tingley Beach Area Master Plan
Plate 30:	Rio Grande Zoo Area Master Plan
Plate 31:	Cultural Corridor Phasing Plan
Plate 32:	Conceptual Drawings Phase Area 1
Plate 33:	Conceptual Drawings Phase Area 2
Plate 34:	Conceptual Drawings Phase Area 3
Plate 35:	Conceptual Drawings Phase Area 4
Plate 36:	Conceptual Drawings Phase Area 5

Table of Figures

Chapter 1

Fig. 1	Grand Tetons, Wyoming, 1959.....	1
Fig. 2	Laws of the Indies, ABQ City Plan.....	3
Fig. 3	Downtown rail grid development, circa 1920.....	3
Fig. 4	Route 66 Map.....	4
Fig 5	Albuquerque at Night, 2008.....	7
Fig. 6a	Alvarado & S.F. Railroad Station, circa 1930.....	9
Fig. 6b	Alvarado Transportation Center, circa 2010.....	9
Fig. 7	St. Louis Arch.....	10
Fig. 8	Indianapolis Circle.....	10
Fig. 9	Desert Conservatory.....	11
Fig. 10	Children’s Fantasy Garden.....	12
Fig. 11	Rio Grande Bosque.....	15
Fig. 12	Map of Boston’s Emerald Necklace.....	16

Chapter 2

Fig. 13	Allée.....	22
Fig. 14	El Camino Real.....	24
Fig. 15	Ha-Ha Wall.....	25
Fig. 16	Petroglyph Over Albuquerque.....	26
Fig. 17	Complexity of the Stakeholders.....	27
Fig. 18	New Mexico Land Ownership.....	32
Fig. 19	Looking NW over the plaza, about 1883.....	34
Fig. 20	ABQ International Balloon Fiesta Park.....	35
Fig. 21	Changing Trends in International Tourism	37
Fig. 22	Petroglyph of Pueblo Creation Legend, circa 1100.....	38
Fig. 23	Cover of The Fighting Trapper.....	39
Fig. 24	National Parks Service NM.....	41
Fig. 25	Health Travel Brochure 1925	42
Fig. 26	New Mexico Landscape.....	43
Fig. 27	Interior Fred Harvey Store, Alvarado Hotel, circa 1905.....	45

Fig. 28	AlvaradoHotelporch.....	46
Fig. 29	Procession, 1952.....	47
Fig. 30	Taos Mountain, NM, 1930.....	47
Fig. 31	Rio Grande River Narrative.....	50
Fig. 32	Zippy Cartoon on Thread City Crossing Bridge, Windham, CN,.....	53
Fig. 33	Center Place: Native American/Pueblo Plans, 2011.....	54
Fig. 34	Plazas: Spanish/Hispanic Plans , 2011.....	55
Fig. 35	Squares: Anglo-American Plans , 2011.....	56
Fig. 36	Route 66 Sign.....	60
Fig. 37	Public Art, 'Aluminum Yucca, 2004.....	62
Fig. 38	Public Art, 'Tile Mural, 2011.....	62
Fig. 39	Bell CarriersI, 2011.....	62
Fig. 40	Dams & Diversions Along the Rio Grande.....	66
Fig. 41	Silvery Minnow Refugium.....	66

Chapter 3

Fig. 42	Missouri Botanical Gardens--St. Louis, MO.....	71
Fig. 43	Arizona-Sonora Desert Museum--Tucson, AZ.....	73
Fig. 44	Indy Children's Museum Carousel Giraffe.....	76
Fig. 45	Carousel Components.....	77
Fig. 46	Broome County, NY Carousel Circuit.....	81
Fig. 47	Recreational Park Carousel.....	81
Fig. 48	Mitchell Park in Greenport Village on Long Island.....	81
Fig. 49	Boston's and Brookline's Emerald Necklace.....	84
Fig. 50	Atlanta's Chattahoochee River, GA.....	86
Fig. 51	Chattahoochee Watershed.....	88
Fig. 52	Recreational mobile structures in Norway.....	90
Fig. 53	Tourist mobile structures in Norway.....	90
Fig. 54	Showers, Assateague Island National.....	91
Fig. 55	Boardwalks, Assateague Island National.....	91
Fig. 56	Solar Rays, Assateague Island National.....	92
Fig. 57	New Entry for Phoenix Zoo.....	92
Fig. 58	Alternative Gabion Construction at the Phoenix Zoo.....	92
Fig. 59	Indianapolis Cultural Corridor.....	94

Fig. 60	Indianapolis Cultural Trail and Districts.....	95
Fig. 61	The High Line, NYC.....	97
Fig. 62	Torpedo Factory Art Center.....	99

Chapter 4

Fig. 63	Albuquerque Census 2012 Charts.....	104
Fig. 64	Bernalillo County.....	106
Fig. 65	Albuquerque Districts.....	107
Fig. 66	Albuquerque Neighborhoods Adjacent to the BioPark Map.....	109
Fig. 67	Albuquerque Roadway Classification Map.....	111
Fig. 68	Park and Ride Map.....	112
Fig. 69	Northern Boundary of the BioPark Land-Use Map.....	116
Fig. 70	Central Avenue Through the BioPark Land-Use Map.....	117
Fig. 71	Eastern Boundaries of the BioPark Land-Use Map.....	117
Fig. 72	Southern Boundary of the BioPark Land-Use Map.....	118

Chapter 5

Fig. 73	Stitching the Urban Fabric Together Conceptual Diagram.....	127
Fig. 74	San Gabriel Park Conceptual Design Diagram.....	134
Fig. 75	Biological Park Conceptual Design Diagram.....	136
Fig. 76	Country Club Conceptual Design Diagram.....	139
Fig. 77	Tingley Beach Conceptual Design Diagram.....	142
Fig. 78	Rio Grande Zoo Conceptual Design Diagram.....	143

Chapter 1: Introduction

Regional Background

The mystique of the American West has been full of romantic images of magnificent “god-like” landscapes and magic-oriented cultures. For the most part, Easterners concocted the myths of the Western allure as a means to develop land and commercialize multi-cultural art for profit. These factors have all played significant roles in creating a unique human landscape juxtaposed against the vast “Big Sky,” resting on gorges, canyons, grasslands, and mountain ranges (see fig. 1).



Fig. 1 Grand Tetons, Wyoming, 1959 (White, Minor)

Politically, the great western expansion of the United States was triggered by two major land acquisitions: the Louisiana Purchase of 1803 (828,000 square miles) and the Treaty of Guadalupe Hidalgo preceding the Mexican–American War of 1848 (525,000 square miles) (Louisiana Purchase; Treaty). The western lands of the Louisiana Purchase and those seized from Mexico were initially at first territories of the U.S., administered by officers of the federal government. When the population reached 60,000, an area of territory negotiated to be admitted to the Union as new states (Wright and Law). However, these distant lands west of the Mississippi River first needed to be connected to eastern industries via roads and railroads and then marketed through newspapers, magazines, and books to

easterners and immigrants as a desirable destination for their future success in life. Continued expansion was necessary if progress was to succeed.

In their book *Westward Expansion: A History of the American Frontier* (2001), Billington and Ridge hypothesize that “Cultural developments lagged as emphasis shifted to the primal tasks of providing food, clothing, and shelter...they altered their ways of life, sought new means for using natural resources, or adapted older practices to the new environment. Innovation, adaptation, and invention...were characteristics of frontier life” (2). With the combination of difficult day-to-day tasks and harsh environmental constraints of New Mexico’s desert and mountainous landscapes, a unique culture developed politically, economically, socially, and artistically in response to frontier mentality.

In New Mexico, these immense societal shifts influenced multi-cultural landscapes dating back to Pueblo Indian Communities (1300s) and Spanish/Hispanic Communities (1600s), adding yet another layer of cultural complexity. Environmentally, New Mexico’s landscape is diverse, with over seventy mountain ranges, the Rio Grande River basin meandering 182,200 square miles through the state, 6 biomes, and 11 landcover classifications within its boundaries. This interesting mix of cultures, environments, and land division has created a patchwork landscape of enchantment (see pl. 1).

Community Background

New Mexico’s phenomenal variety of cultural influences and dramatic landscapes are self-evident in Albuquerque, its largest populated city, located in Bernalillo county within the Rio Grande Valley. Over the past 300, years Albuquerque has evolved in several stages and is now characterized by numerous districts with



Fig. 2 Laws of the Indies, ABQ City Plan (Wilson and Polyzoides 131)

the following major divisions: The Valley (1600s), Old Town (1706), Downtown (1880s railroad), University Area (1889/1920s), The Heights (1960s), and Uptown (1950-1975 /shopping malls) (see pl. 2).

Old Town began as a Spanish colonial city organized by 148 town planning rules called “The Laws of the Indies” (see fig. 2). In 1573, Spain first signed these rules into law, and they were finally documented and published in 1681. The writings of Roman Empire engineer Vitruvius and Italian Renaissance architect Alberti greatly influenced these laws. In the United States, Thomas Jefferson helped establish the Land Ordinance of 1785, which introduced grids and zoning predicated by the Laws of the Indies (Wilson and Polyzoides 20).

Over 150 years later, Albuquerque’s New Town (see fig. 3), today’s Downtown, was laid out in 1880s, by the Atchison, Topeka and Santa Fe Railway (AT&SF), establishing a central hub between Kansas and California with its largest locomotive repair shop west of Topeka (approximately 1 mile east of Old Town) on 2nd Street. Once again, organized patterns were placed on the landscape of New Mexico by a set ruling body which never considered existing environmental or cultural conditions. The only thought to bringing these two distinctive communities (Railroad/Anglo and Old Town/Hispanic) together in the new plan was Railroad Avenue (Now Central Avenue), which linked

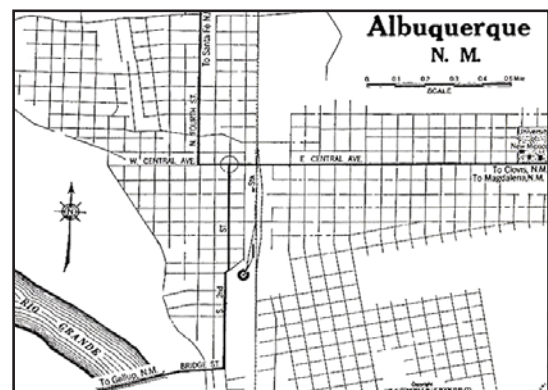


Fig. 3 Downtown rail grid development, circa 1920 (Perry)

Old Town to the new street grid created by the AT&SF.

Four key events occurred in Albuquerque during this time:

1. Historic Spanish/Hispanic ties to Mexico and the pueblo communities along the El Camino Real's north/south axis shifted to the Anglo-American east/west axis of the AT&SF.
2. Two separate towns developed along two separate cultural lines.
3. Tourism began in Albuquerque as the AT&SF marketed the Southwest as exotic, "the new Orient," to replace overseas travel with internal sight-seeing.
4. The AT&SF commissioned eastern artists to portray the Southwest as a must-see destination, while Native Americans sold their craft arts of pottery, jewelry, weaving, bead work, etc. to visitors at the station (Howard and Pardue, 24).

During the 1920s-30s, Albuquerque experienced another cultural shift. The construction of Route 66 (The Mother Road) connecting Chicago to Los Angeles turned the city toward to the automobile instead of the railroads (see fig. 4). From the 1920s through 1960s, Americans were enticed to "Take a Drive Along America's Main Street" to see roadside attractions, explore National Parks, stop in at diners for fast food, and stay overnight in magical neon-lit motels. "America's

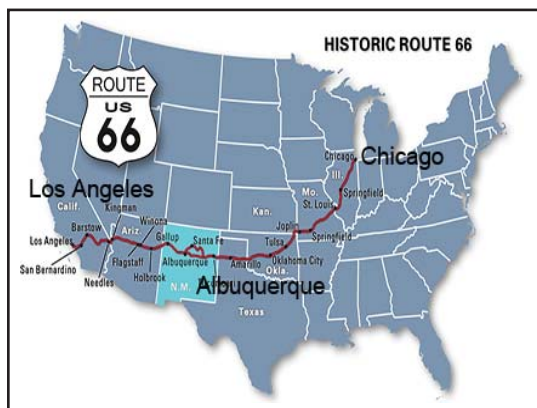


Fig. 4 Route 66 Map (Route 66)

Main Street was the nation's primary ride--a two-lane roller coaster of thrills that rambled through eight states and three time zones. All along the miles of the linear midway, a diversity of car commerce combined services motorists required with the entertainment they desired" (Witzel 11).

During World War II, Albuquerque became a key player in the Atomic Age with the establishment of Kirtland Air Force Base in 1939, Sandia Base in the early 1940s, and Sandia National Laboratories in 1949. Central Avenue became an even greater commercial hub for the city, extending far into the Mesa and Sandia foothills by the 1970s. Morley explains: “The post-World War II history of Albuquerque...exemplifies the struggle of Western cities to redefine a civic identity based on growth, standardization, and tourism. As its population quadrupled from 1940-60...a heritage movement leading to 1956 zoning laws intended to protect historic architecture. Although the creation of Old Town Albuquerque successfully preserved the historic city center, the commodification of the zone as a tourist attraction has diminished its cultural authenticity” (Morley 2) Eventually, this shift in genuine community identity and the loss of locally owned businesses to outside corporations created a sense of disconnect, with the local sentiment being that Old Town was “a tourist trap” and not a true part of the community.

Wade Patterson and Stephen M. Wheeler write,

Between approximately 1880 and 2000, successive forms of development have utilized increasingly discontinuous and disconnected neighborhood street patterns and covered increasingly large amounts of land at the fringe of the urbanized area. Since the 1980s, Albuquerque has moved toward the status of a regional metropolis, with suburban development and rural sprawl enlarging the area’s boundaries to some 1,200 square miles. (36)

Albuquerque’s development from the 1970s to the early 2010s has occurred at such a rapid pace that government and community leaders have found it difficult

or ignored the detrimental effects that urban sprawl had brought to the city. Wade Patterson and Stephen M. Wheeler state,

Growth, however, has brought social and environmental challenges. Rural sprawl defines areas of low-density population of upscale white residents; middle-class tracts lack a sense of place as curved streets end in cul-de-sacs; and the central core of Albuquerque houses poor and minority people. Options for the city's development still remain but so do "enormous challenges for planning and governance." (36)

The 2012 Census estimates Albuquerque's population to be 552,804, more than 25% of New Mexico's 2,085,538 citizens. Statistical analysis predicts place the city's 2000-2050 growth rate at 1.4% per year, which means 60,000 additional households. Albuquerque's traditional Western horizontal growth pattern versus Eastern vertical buildup of taller buildings has added great pressure on infrastructure and transportation demands. With only eight buildings exceeding 14 stories (all in the downtown business district except one) and the tallest in the whole state of New Mexico being the 22-story Albuquerque Plaza Office Tower (completed in 1990), Albuquerque is a city of flat buildings reaching into what seems like infinity (Albuquerque's tallest buildings-Top 20). The city cannot physically continue this environmentally unsustainable growth pattern due to the enclosure boundary constraints of the mountains to the east, federal lands (Kirkland AFB) to the southeast, Isleta Indian Reservation to the south, Laguna Indian Reservation to the west, the volcanic basalt escarpment to the northwest, and Santa Ana Indian Reservation to the north.

Over the years, Albuquerque has tried to balance ever-increasing urban sprawl with public greenspace consisting of parks, open space, University of



Fig. 5 Albuquerque at Night, 2008 (macbezz)

New Mexico (UNM), Cultural Services facilities and attractions, and federal lands. These spaces are generally well maintained and offer beneficial active and passive recreational resources to the city and its visitors, yet they lack connectivity due to interruptions caused by rapid car culture (see fig. 5). The following list

of Albuquerque's greenspace statistics provides a clearer understanding of key public space resources (see pl. 2):

Albuquerque public space:

- Some consider Old Town Plaza (1706) as the first park, while others give that honor to Robinson Park (1895).
- Parks and Recreation Department established in 1954-1955.
- 286 City Parks with 113 miles of trails.
- Open space and parks totaling 28,000 acres (Including Rio Grande Valley State Park)
- Albuquerque International Balloon Fiesta Park, 360 acres
- Rio Grande Valley State Park, 5,000 acres
- BioPark, 120 acres
- Two mountain ranges (Sandias and Manzanos) and extinct volcanoes along the city's boundaries. Elevation changes across town range from 820'-902' to 5,758' at Sandia Peak. (Dumont)

In 1999, Albuquerque business leaders, stakeholders, and the Downtown Action Team (DAT) met to discuss how to jump start and revitalize downtown. In his classic book *The Image of the City* (1982), Kevin Lynch analytically classified

five key physical forms necessary for a healthy urban environment: paths, edges, districts, nodes, and landmarks (47-48). In May 2000, DAT addressed Lynch's elements and superseded existing zoning codes to designate a downtown district. DAT's established six clear districts in the downtown area and developed a color-coding system to allow greater understanding of paths and edges of districts. These districts are the Arts & Entertainment District, Casa District, Courthouse District, Plaza District, Transportation Center District, and Warehouse District. City planners also commissioned distinctive district signage and landscape streetscape furnishings to help celebrate the uniqueness of each of the six districts. By applying three of the five Lynchian elements (paths, edges, and districts) the reorganization of Albuquerque's downtown design development has reinstated a more human/pedestrian scale, which has made wayfinding much easier for out-of-town visitors (see pl. 3). Economically, tourism plays an essential role in New Mexico and is a key sector of the city's economy. Chapter 2 provides further discussion of tourism, but for the following list is a general breakdown of statistics compiled by the Albuquerque Convention & Visitors Bureau. According to the Albuquerque Convention & Visitors Bureau tourism added 6.1 million visitors in 2011, generated \$2 billion in annual revenue to Bernalillo County, and added over 29,000 travel and tourism jobs added in the metro area (Albuquerque Convention & Visitors Bureau).

In the 21st century, Albuquerque has distinctive districts (see pl. 2). However, the overall urban fabric is loosely woven with numerous cultural gaps and isolated public spaces. Over twelve years of experience in Albuquerque (1989-2000), I found it difficult to recognize a specific "built" cultural identity. Perhaps this visual social landmark quality was lost in the changing variables during the city's rapid development.

At one time, Albuquerque did have a significant place that served as a landmark to its citizens: the Alvarado Hotel and the Santa Fe Railroad Station were lynchpins for social interaction and community pride. The Alvarado Hotel, was designed by Charles Whittlesey and had been built in 1902 for the Santa Fe Railway (see fig. 6a). Fred Harvey--Harvey House--ran this facility with the highest standards of quality, offering guests warm food, restful lodging, peaceful gardens, and



Fig. 6a Alvarado & S.F. Railroad Station, circa 1930 (Albuquerque Convention & Visitors Bureau)

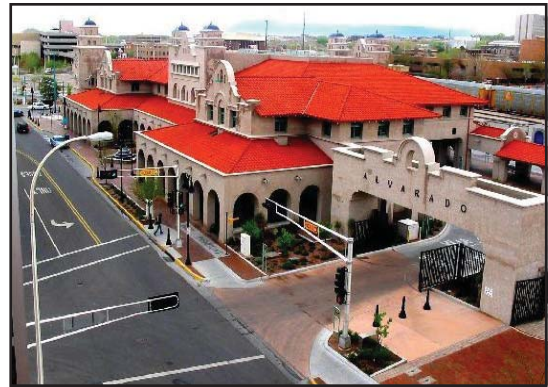


Fig. 6b Alvarado Transportation Center, circa 2010 (James ABQ)

the merchandising of exotic western art. Even Hollywood stars stopped to enjoy the grand atmosphere of the Alvarado while traveling on the streamliner “Super Chief,” which ran between Los Angeles and Chicago.

On January 6, 1912, the documents that granted New Mexico the right to become the 47th state of the United States of America were signed and celebrated in the Alvarado Hotel. As a civic landmark, the Alvarado Hotel clearly held great pride and history for the City of Albuquerque. Unfortunately, the hotel fell into disrepair and was demolished in the 1970s, and the station fell victim to fire in 1993. Two days after the wrecking ball destroyed Albuquerque’s most famous landmark, an editorial appeared in the *Albuquerque Journal* trying to understand why this devastation had happened to the urban fabric of the city. The editorial

gave three main reasons for the Alvarado Hotel being demolished. First, the city had big plans for renovating the property as a showcase for new development downtown. Second, the Santa Fe Railway refused to negotiate an asking price of \$15 million for the abandoned rundown property. Finally, public interest and money could not be raised in time (Cited in Schuurman). Everyone's plans went awry: the city lost an architectural gem, the railroad gained no profit, and the citizens lost a historic link to the past and a place of cultural pride.

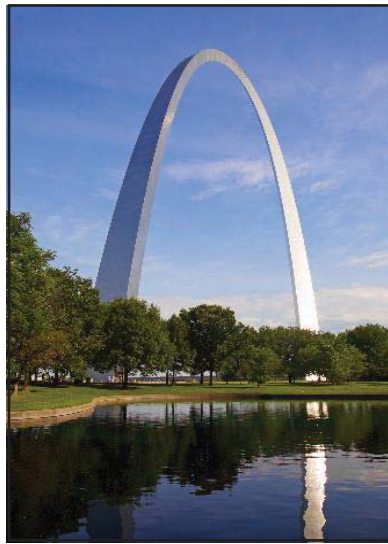


Fig. 7 St. Louis Arch (City-Data)

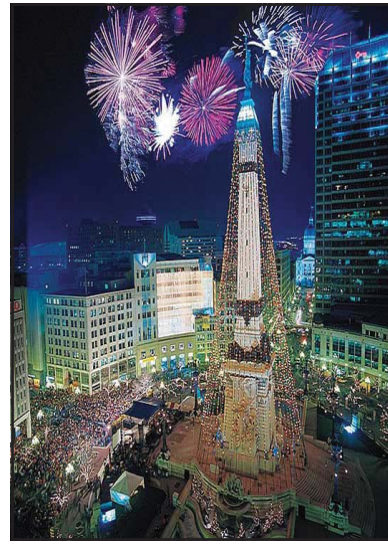


Fig. 8 Indianapolis Circle (Disney)

Most large American cities have elements that residents value as key cultural identifiers: Prime examples are St. Louis' Gateway Arch (see fig. 7), Chicago's Water Tower; Boston's Swan Boats, New York City's Empire State Building, and Indianapolis' The Circle...etc. (see fig. 8). The loss of the Alvarado Hotel, a familiar community icon in Albuquerque, created a vacuum where citizens once felt a sense of place and personal connection to the city. In the 2000s, the Alvarado Transportation Center (ATC) was built on the old Alvarado Hotel site (see fig. 6b). Designed to be reminiscent of the Mission Revival style, the (ATC) is a wonderful facility for ABQ Ride buses, Amtrak, Greyhound Lines, and the New Mexico Rail

Runner Express commuter rail line (see pl. 3 & 4). Although ATC has filled a gap in the physical fabric of Albuquerque, it is linked more to transportation and tourism than functioning as a community icon or social landmark for local citizens.

Project Site Background

In August 1987, the City of Albuquerque began to address the qualitative issues of civic cultural needs by enacting the “Quality of Life” tax, a 1% fee on all restaurant purchases. General Obligation Bond Funds (G.O. Bonds.) were earmarked for public art projects through this new funding. Quality of Life Funds authorized in 1987 were discontinued in 1995. With a change in the city’s political power, funding to enhance cultural and recreational opportunities was redirected into infrastructure and the Police Department (Albuquerque Capital Implementation Program). This visionary approach to cultural and rehabilitation reconstruction of a sprawling urban environment allowed the city 8 years to repair and restore its civic pride, but also to establish new symbols of social well-being. The climax to this progressive movement was the creation of the Albuquerque Biological Park in the 1990s (see fig. 9). The BioPark has quickly grown into a rich landscape. Visitors can relax, engage in various forms of



Fig. 9 Desert Conservatory
(Author’s own photograph)

recreation, enjoy cultural art (Doolittle Cottonwood Fountain and The Curandera Healing Sculpture & Gardens), interact with the ecosystems of the West (Aquarium and Rio Grande Botanic Gardens), participate in educational programs, explore

creative play (Children's Fantasy Garden, Japanese Garden, and Model Railway) (see fig. 10), and share in year-around cultural events. As of 2011, the BioPark mission statement is as follows:

The mission of the Albuquerque Biological Park is to enrich the quality of life for all through education, recreation, conservation and research, by providing a comprehensive environmental park consisting of the Albuquerque Aquarium, Rio Grande Botanic Garden, Rio Grande Zoo and Tingley Beach. (BioPark)

Even with all these wonderful facilities, educational resources, and special cultural events that the BioPark affords the community and tourists, immense opportunities have been missed. Future projects must address issues that inhibit the BioPark's full potential to regain Albuquerque's sense of place and personal connection for its citizens.



Fig. 10 Children's Fantasy Garden
(Author's own photograph)

Problem Statement

The BioPark is a wonderful asset for the city of Albuquerque, and its positive impact means the city cannot ignore the following major issues which is addressed in this creative project.

1. The leading problem is a disjointed sense of entry into the Biological Park and Rio Grande Zoo. These two entries function well individually as automotive

ingress/egress, yet traffic flow between the facilities wanders indirectly through neighborhoods and may be hard for visitors to find. Also, these entries visually lack a sense of invitation and aesthetic. They are functional, but they do not celebrate the richness of the experiences within.

2. The BioPark is missing a tremendous opportunity for greater interaction between existing cultural facilities, including Historic Old Town, the Rio Grande River & Cottonwood Bosque, Route 66, El Camino Real, the Rio Grande Zoo, Tingley Beach, San Gabriel State Park, Downtown, National Hispanic Cultural Center, Museum Campus on Mountain Rd., and the Rio Grande Nature Center. The absence of both physical connectivity and visual association between these surrounding amenities all located within a 5 mile radius of the BioPark, create a piecemeal development pattern that lacks harmony and does not showcase these cultural assets in the best light.
3. Visibility and pedestrian circulation are also a concern, because too much 12' fencing isolates the public from the BioPark. While the fence provides a simple remedy to crime and liability issues for the city it sends the public the message that everyone is walled off and locked out.
4. Within the BioPark spatially fragmented main plaza areas need more shade, additional casual seating, and clear wayfinding signage.

To address these issues, this creative project explores creating and/or refining corridors linkages to existing urban cultural treasures. I also proposes developing civic landmarks along these corridors that citizens will identify as community symbols and sources of civic pride.

After multiple site visits to the BioPark, preliminary evaluation revealed three well-maintained facilities--Biological Park, Tingley Beach, and the Rio Grande Zoo--

that meet their individual mission goals but lack wholistic connectivity between their component pieces and the Rio Grande River. There is a strong need for a more interconnected/gestalt approach to enhance these public amenities. This creative project builds upon and connects existing BioPark facilities, environmental corridors, transportation systems, public art, recreational systems, and cultural amenities within a 5 mile +/- radius of the BioPark.

The following design development concepts are addressed:

- Create a cultural corridor master plan with the BioPark as a hub for educational, recreational, environmental, and artistic interchanges.
- Provide conceptual redesign of BioPark entrances to link it with its sister facilities and provide a stronger sense of entry off of Route 66 and better orientation to the Rio Grande River.
- Develop concepts for new plazas to create an orientation that connects BioPark facilities with the Rio Grande River, pairing both environmental and cultural nodes for public interaction.
- Develop a concept for a regional artistic centerpiece and social landmarks within a corridor linked to the BioPark. The directive will be to incorporate the existing City of Albuquerque's Public Art Program and support regional artists.
- Produce a conceptual design for a bold landscape of whimsical and narrative delight generating a highly recognized environment that develop the special overlap of historic, cultural, environmental, and native panoramas.

- Develop a cohesive theme to unite/link historic Old Town, the Rio Grande River and Cottonwood Bosque, Route 66 (The Mother Road), El Camino Real (The Royal Road), the Rio Grande Zoo, Tingley Beach, San Gabriel State Park, Downtown, National Hispanic Cultural Center, Museum Campus on Mountain Rd., Public Art Program, and the Rio Grande Nature Center.

The ultimate goal of landscape design is to maintain or improve the quality of the environment. No matter how many or what kind of professional methods (inventory/analysis/synthesis) landscape architects use in their design process, the overriding issue should be strengthening connections between citizens and their community. Albuquerque is a multicultural society with a rich and varied history of trial and error in its responses to sensitive racial issues. Since this project is a public space owned by the City of Albuquerque, the design must respect cultural diversity.

From an environmental perspective, the BioPark is located on the Rio Grande and the Bosque (see fig. 11). These two critical environmental ecosystems are under great strain from the developmental pressures created by urban growth and limited water resources. The threat of impending ecological collapse is evident from the decline of the native plant species (exotics such as Salt Cedar



Fig. 11 Rio Grande Bosque
(Author's own photograph)

and Russian Olives are pervasive) and the low water flow (estimated withdrawal of 150' from its banks) under the Central Avenue Bridge. These water issues are too enormous to be encompassed within the scale of this creative project, but it is appropriate to examine ancillary design solutions that may assist in a partial

resolution of the “big picture” problem.

The two matters of cultural sensitivity and environmental enhancement shall be the litmus test for design solutions generated by this project. Holistic design addressing cultural, environmental, and economic issues can weave together the pearls that are the present BioPark into a brilliant necklace that becomes Albuquerque’s future cultural corridor. This grand metaphor may seem daunting, but successful precedents such as Boston’s Emerald Necklace show that it is possible (see fig. 12). In the 1870s, Frederick Law Olmsted designed a park system for the city of Boston along the Charles River, in the marshy Back Bay, around Jamaica Pond, and in West Roxbury (Boston’s Emerald Necklace). Over 100 years later, this brilliant design approach allows the city of Boston a continuous network of six parks and numerous parkways interconnecting citizens with recreational facilities, wildlife habitats, and cultural activities.



Fig. 12 Map of Boston's Emerald Necklace (Emerald Necklace Conservancy)

Methodology

The methodology for this comprehensive creative project was to first develop a strong design development foundation through completing an extensive examination of literature, which encompasses an understanding of landscape design principles in relationship to urban linkages that will enhance Albuquerque's cultural, social, and environmental needs. A second research method was to gather data for a straightforward study of site-specific ecological, cultural/historical, and resource demands. In addition to the review of reports, aerial photography, drawings, historical archives, interviews, and maps, several site visits were necessary. Photographs taken during site visits plus other documentation provided material for an extensive analysis. The examination of literature and site data set criteria for selecting design case studies.

Major design categories became apparent in reviewing and analyzing collected data: environmental corridor systems, botanical gardens, carousels, greenway recreational projects, streetscapes, plazas, low-impact mobile structures, and public art in the landscape. Based on these findings, the following sites or programs were identified for further study:

Botanical gardens:

Missouri Botanical Garden--St. Louis, MO

Arizona-Sonora Desert Museum--Tucson, AZ

Carousels:

Lincoln Park Zoo Carousel--Chicago, IL

The Triple Cities-Carousel's--Upstate, NY (Broome County)

Environmental corridor systems:

Emerald Necklace--Boston, MA

Atlanta's Chattahoochee River--Atlanta, GA

Architecture alternatives:

Phoenix Zoo--Phoenix, AZ

Assateague Island National Seashore--MD, VA

Public Spaces:

Cultural Corridor--Indianapolis, IN

The High Line--New York City, NY

Public art program:

Torpedo Factory Art Center--Alexandria, VA

Reviews of these sites and programs consisted of various site visits to the surrounding local area, phone interviews with design teams and current users, and inventory/analysis of collected information. Information from the inventory, analysis and study of various sites and programs contributed to the development of design guidelines. Once finalized, these guidelines directed development of the Cultural Corridors Network Master Plan (Albuquerque BioPark), which included establishing the hierarchy of social and cultural corridors, addressing needs of the surrounding neighborhoods, and generating concept principles based on ideologies of connectivity. After this master planning, the next steps were to develop goals & objectives, establish design criteria, and select design development sites.

The final phase of the project produced schematic/concept plans, sections, and character sketches to synthesize the research and analysis findings into a complete design package.

Assumptions

The following assumptions have been made to accomplish this creative project within the timeline of a university semester:

- Redesign of the BioPark's main entries and green interior cores will occur. This approach and resulting guidelines will be used for detailed design work in other areas.
- Multiple agencies that control the Rio Grande River and its water shall allow the BioPark to connect to its banks.
- New Mexico State Parks Department and the city's Parks and Recreation Department will approve the redesign of San Gabriel State Park.
- Albuquerque's Cultural Service Department and Public Arts Program will embrace the design approach of a core/epicenter development for some of their collection.
- Albuquerque's Police Department will approve new substations and patrols along the cultural corridor and Rio Grande River.
- Albuquerque and the University of New Mexico will unite in a joint venture to re-purpose the historic Route 66 El Vado Motel.
- Water flow of the Rio Grande River will allow seasonal recreational use.

Delimitations

Redesigning the BioPark and creating a cultural corridor for Albuquerque is a complex problem. It could take years to coordinate all the necessary parties

needed to accomplish this goal. Therefore, the following delimitations have been made to accomplish this creative project within the timeline of a university semester:

- Meetings with governmental agencies did not occur.
- Meetings with neighborhood associations did not occur.
- Public meetings did not occur.
- Not all grading and infrastructure issues were not addressed.
- Intensive habitat and environmental restoration was not be addressed.
- Intensive water rights issues were not be addressed.

Significance

Albuquerque has a significant presence of timeless textured landscape touched by the soft hand of the Rio Grande River. The river moves so slowly through the desert, yet it has drawn many diverse cultures to its tree-lined, shady banks, creating great shifts in circumstances and integration of humanity. This great dynamic has brought brilliance in art and cultural rituals but also cultural conflicts and misunderstanding. Currently, Albuquerque has found that the Rio Grande River is once again nurturing and offering therapeutic healing to a city that has grown too fast for its citizens to fully take root. My research suggests the river holds greater potential for the BioPark than linkage to Old Town's tourism.

Building from the simple ideas of Landscape Architect Kevin Lynch countless people over twenty years have explored how a portion of land develops into a major identifier of why we come to live in a place called a city. Revisiting the timeless ideology of urban design and cultural environmental analysis within the established writings of Kevin Lynch, J.B. Jackson, Edward White, Jane Jacobs, and Christopher Alexander has reaffirmed my foundational professional beliefs

that theoretical sensitivity to a place can generate positive development of a city's growth. In *A Pattern Language* (1977), Christopher Alexander clarified the initial steps of the story that the City of Albuquerque is composing at the BioPark. These beginning patterns can be paraphrased from the poetry of Alexander's urban literature:

25-Access to Water	8-Mosaic of Subcultures
30-Activity Nodes	24-Sacred Sites
53-Main Gateways	57-Children in the City
249-Ornament	171-Tree Places
31-Promenade	172-Garden Growing Wild
204-Sercret Place	10-Magic of the City

And yet, the heritage and story of the land and its people are held behind the barrier of the BioPark's 12'-tall chain-link fence. Breaking down this isolation is the goal and challenge of this creative project. The BioPark has great potential to act as a landmark that would reconnect the city to the Rio Grande River and the Bosque. From the historic traffic corridors of the El Camino Real and Route 66, the city's cultural heritage would flow together to restructure Albuquerque's urban fabric into a more solid pattern. Under the blue New Mexico skies, the City of Albuquerque is finding its identity and growing into a quality of life good for both residents and visitors.

This creative project integrates the built/architectural methods of Alexander's pattern languages, the urban geography methods of Kevin Lynch, and the current landscape methodologies of placemaking to develop a more comprehensive and current application in designing a cultural corridor and creating social landmarks for the city of Albuquerque.

Chapter 2: Additional Contextual Background

For further understanding of the BioPark site, this chapter will address key terminology, contextual background complexity, and additional historical framework that was critical in creating a more holistic design approach. When designing for a site like the BioPark, the city must deem it a cultural attraction for both visitors and residents. Thus, the design must look outside the constraints of site boundaries (Albuquerque Cultural Services). If design concepts are to be successful, they must gain perspective from the intricacies of awareness to contextual envelopes of cultural layers, environmental sensitivity, infrastructure issues, stakeholder diversity, and the element of time upon the site.

Definitions

Familiarity with the following terminology will provide greater perspective into this creative project.

Acequias: (noun) Spanish word for an irrigation or drainage canal in the Southwestern U.S.

Allée: (noun) a stately tree-lined avenue intended for pedestrian use; the trees or tall shrubs are often clipped or pleached to form a sort of wall (Zuylen 161) (see fig. 13).



Fig. 13 Allée (Le Brusq)

Bioengineering: (noun) the combination of biological, mechanical, and ecological concepts to control erosion and stabilize soil through the use of vegetation or a combination of it and construction materials (Leech, 10).

Bio-filter: (noun) engineered natural system to remove sediments and pollution before entering waterways or groundwater. Greenbelt and constructed wetland systems are designed to integrate multiple ecosystem services for air and water remediation and wastestream filtration at the commercial or municipal scale (Urbanbiofilter)

Biome: (noun) a complex biotic community characterized by distinctive plant and animal species and maintained under the climatic conditions of the region, especially such a community that has developed to climax (Biome).

Biomimicry: (noun) from bio, meaning life, mimimic, and meaning to imitate. This ancient concept recently returning to scientific thought examines its models, systems, processes, and elements-and emulates or takes inspiration from them to solve human problems (Biomimicry).

Biophilia: (noun) the hypothesis suggests that there is an instinctive bond between human beings and other living systems. (Wilson)

Bosque: (noun) Spanish word that is used traditionally in the southwest to refer to a wooded riparian area (US Army Corps 1).

Curandera: (noun) Spanish word for a woman folk healer (Curandera).

El Camino Real: (noun) during the colonial years, New Mexico was tied to the outside world by a single thoroughfare that descended the Rio Grande valley from north of Santa Fe, dropped through the natural gate at El Paso, and wended its way via the provinces of the old Viceroyalty of New Spain to Mexico City, some 1,200 miles to the south. This artery of commerce and travel was known as El Camino Real, which meant Royal Road or King's Highway (National Parks Service) (see fig. 14).



Fig. 14 El Camino Real (NPS)

Environmental Art: (noun) representational art (1960s on) inspired by the environmental knowledge and information supplied by scientists, journalists, and artists bringing our awareness supporting environmental causes and educating the public through their creation. Site-focused nature visual iconography to the environmental art dialogue (Environmental Art).

Esplanades: (noun) any open, level space, especially one serving for public walks or drives (Esplanades).

Fluctuate: (intransitive verb) to shift back and forth uncertainly, to ebb and flow in waves (Fluctuate).

Genius Loci: (noun) the pervading spirit of a place (Greek). Acute sensitivity to physical surroundings (Pregill and Volkman 93).

Genre De Vie: (noun) French term to include all the cultural, spiritual, material, and social aspects which affect form (Rapoport 47).

Gestalt: (noun) a configuration, pattern, or organized field having specific properties that cannot be derived from the summation of its component parts; a unified whole. An instance or example of such a unified whole (Gestalt).

Greenway: (noun) any scenic trail or route set aside for travel or recreational activities (Greenway).

Ha-Ha: (noun) a sunken fence used to demarcate boundaries without interfering with the view (Zuylen 162) (see fig. 15).

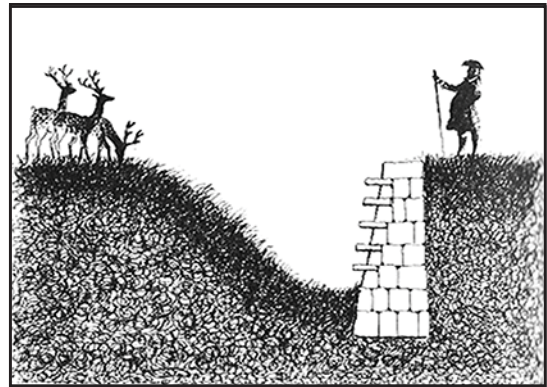


Fig. 15 Ha-Ha Wall (Felix)

Laws of the Indies: (noun) 148 town planning rules used to organize Spanish colonial cities. First published in 1681. (Wilson and Polyzoides 20).

Lynchian Elements: (noun) mental maps consist of five elements: (1) paths: routes along which people move throughout the city; (2) edges: boundaries and breaks in continuity; (3) districts: areas characterized by common characteristics; (4) nodes: strategic focus points for orientation like squares and junctions; and (5) landmarks: external points of orientation, usually an easily identifiable physical object in the urban landscape. Design should recognize and organize these urban elements into a coherent pattern. According Lynch, paths are the key since these organize

urban mobility (Summarized in Lange).

Lynchpin: (noun) a person or thing regarded as an essential or coordinating element (Lynchpin).

Mystique: (noun) an aura of heightened value, interest, or meaning surrounding something, arising from attitudes and beliefs that impute special power or mystery to it: the cowboy mystique; the mystique of existentialism (Mystique).

Petroglyph: (noun) a drawing or carving on rock, made by a member of a prehistoric people (Petroglyph) (see fig. 16).



Fig. 16 Petroglyph Over Albuquerque (Steele)

Placemaking: (noun/verb) a multi-faceted approach to the planning, design, and management of public spaces. Both a process and a philosophy it capitalizes community's assets, inspirations, and potential, ultimately creating good public spaces that promote well being. (Bohl 3).

Plaza: (noun) a public square in a city or town. (Plaza).

Promenade: (noun) a pleasant place for strolling (Zuylen 163).

Public art: (noun) works of art in any media that has been planned and executed with the specific intention of being sited or staged in the physical public domain, usually outside and accessible to all (Public Art).

Riparian: (adjective) relating to or living or located along the bank of a natural watercourse (as a river) or sometimes along a lake or tidewater (Riparian).

Sense of Place: (noun/adjective) a characteristic that some geographic places have and some do not; a feeling or perception held by people (not by the place itself). Often used in relation to those characteristics that make a place special or unique, and to those that foster a sense of authentic human attachment and belonging (Sense of Place).

Stakeholder: (noun) a person or group that has an investment, share, or interest in something, as a business or community (Stakeholder).

Streetscape: (noun) the appearance or view of a street (Streetscape).

Wayfinding: (noun/verb) signs, maps, and other graphic or audible methods used to convey location and directions to travelers (Wayfinding).

Stakeholders and User Groups

The following stakeholders and user groups (see fig. 17) may have investment interest, influence, and involvement over the BioPark and adjacent amenities. This list is based from online research and interviews with local landscape architects and city officials, but it may not be inclusive due

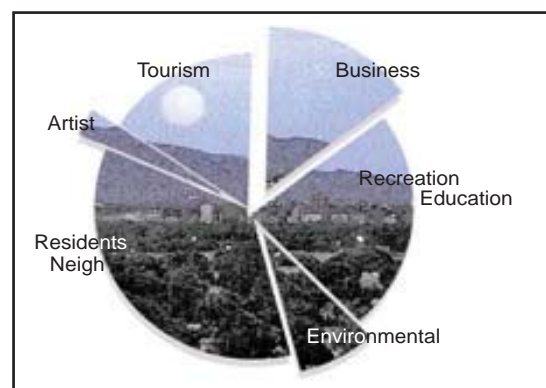


Fig. 17 Complexity of the Stakeholders

to the complexity of the site. To accomplish this creative project within the timeline of a university semester, it would have been impossible to convene the necessary interactive meetings needed to engage stakeholders and user groups within the redesign process. In the future, when the mayor's task force is reconvened to review ABQ, The Plan: The Rio Grande Vision 2012 and adjacent BioPark, all stated parties below must be engaged to accomplish a successful redesign solution.

- Albuquerque residents
- Artists
- Businesses: business associations, food venders, galleries, art studios, and retailers.
- Education: students, teachers, naturalists, and researchers.
- Environment: Fauna and flora, geology, and hydrology.
- Neighborhood Associations: Barelás Neighborhood Association, Albuquerque Downtown Neighborhoods Association, Huning Castle/Country Club Neighborhood Association, Old Town, Raynolds Addition Neighborhood Association, Sawmill Community Land Trust, Wells Park Neighborhood Association, and West Old Town Neighborhood.
- Recreation: walkers, cyclists, hikers, equestrians, canoers, kayakers, fishermen, and bird watchers.
- Tourists/Visitors (in-state, out-of-state, and international)

Governmental Agencies (Federal, State, County, and City)

The following governmental agencies may have jurisdiction, administrative control, and advisory involvement over the redesign of the BioPark and adjacent amenities. This list is derived from online research and interviews with local

landscape architects and city officials, but it may not be inclusive due to the complexity of the site. Because of the time constraints of this creative project, it would be unmanageable to assemble all the necessary interactive meetings needed to engage all required governmental organizations within the redesign process. In the future, the city of Albuquerque and the BioPark must involve the necessary governmental agencies in the design development to ensure successful outcomes. Note, the bold font indicates greater importance to the project site development.

Federal: Bureau of Land Management (BLM)

Bureau of Outdoor Recreation (BOR)

Department of Agriculture Forest Service Lands

Department of Environment and Energy

Environmental Protection Agency (EPA)

Interstate Streams Commission

Middle Rio Grande Conservancy District (MRGCD)

National Wildlife Refuge System

National Park Service

U.S. Army Corps of Engineers

U.S. Forest Service

U.S. Fish and Wildlife Service

USGS Groundwater Resources Program

US Job Corps

U.S. Soil Conservation Service (NCRS)

State: Bernalillo County Environmental Health Department Water Resources

Department of Public Safety, New Mexico State Police

Energy, Minerals and Natural Resources Department (EMNRD)

Indian Pueblo Cultural Center

Middle Rio Grande Council of Governments

Museum of Indian Arts and Culture

Museum of International Folk Art

New Mexico Acequia Commission

New Mexico Department of Agriculture

New Mexico Arts Commission

New Mexico Bureau of Geology and Mineral Resources

New Mexico Department of Cultural Affairs

New Mexico Economic Development Department

New Mexico Office of the State Engineers (OSE)

New Mexico Environment Department

New Mexico Department of Game and Fish

New Mexico Historic Preservation Division

New Mexico State Parks Division

New Mexico State Land Office

New Mexico Department of Tourism

New Mexico Department of Transportation (NMSHTD)

University of New Mexico

Tribal Government: Sandia Pueblo

Santa Ana Pueblo

Isleta Pueblo

City: **Albuquerque/Bernalillo County Water Authority**

Albuquerque Hispano Chamber of Commerce

Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA)

Albuquerque Air Quality Control Board

Albuquerque Art Alliance

Albuquerque Chamber of Commerce

Albuquerque Convention and Visitors Bureau

Albuquerque Economic Development

Albuquerque Cultural Services Department

Albuquerque Family & Community Services Department (Schools)

Albuquerque Municipal Development Department (Roads)

Albuquerque Parks & Recreation Department

Albuquerque Planning Department

Albuquerque Police Department

Albuquerque Transit Department

City of Albuquerque Public Works Water Conservation Office

New Mexico Museum of Art

This list of agencies was compiled with information from three interviews and three websites:

Interviews: Lynn Mazur, P.E., C.F.M., Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA), Development Review Engineer

Nancy Musinski, P.E., PMP, Principal Engineer, Albuquerque Bernalillo County Water Utility Authority

George Radnovich, ASLA, Sites Southwest, Senior Principal

Websites: City of Albuquerque (<http://www.cabq.gov>)

New Mexico (<http://newmexico.sks.com>)

United States Federal Agencies (<http://www.usa.gov/>)

Tourism

The uniqueness of the Southwest both in landscape and cultural heritage has long been one of America's marketed dreamscapes, a place to ponder "buena vistas" and narrow canyons, past and present, color and light, reinvent one's self, and make a fortune. Nevertheless, the Southwest, in particular New Mexico, is a real place where people make a living off of tourism. In 2011, 6.1 million visitors spent \$2 billion in Bernalillo County, which employed over 29,000 in Albuquerque's metro area alone (Albuquerque Convention & Visitors Bureau). New Mexico's economy has not evolved from industrial smokestacks, oil, or agribusiness; instead, the economic juggernaut has historically been tourism (Wrobel and Long 194). One can debate whether the federal government has a more powerful role in New Mexico's economy with its ownership and control of 41.8% of the property in the state's boundaries, but tourism brings visitors to see these federally owned landscapes (New Mexico Land) (see fig. 18). The state's politics and economy bares the iconoclastic signature of tourism (Wrobel and Long 207). One only has to hear New Mexico's official nickname "The Land of Enchantment" (achieved this official status in 1999) or the Spanish version "Tierra del Encanto" to be enticed to travel to this distant magical land (New Mexico State Nickname). Also, one

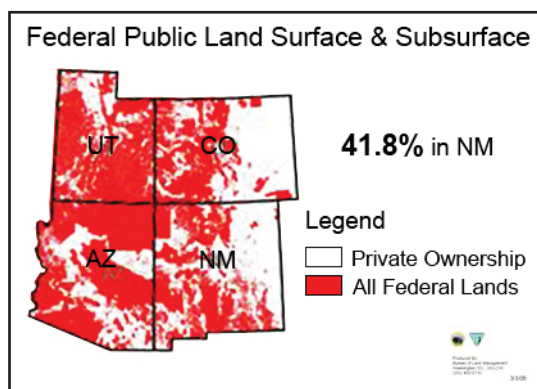


Fig. 18 New Mexico Land Ownership
(New Mexico Land)

only needs to see New Mexico's state motto "Crescit eundo"--It grows as it goes--adopted in 1887, only 7 years after the railroads came to this state (New Mexico State Motto). To expound the state's motto in economic terms the focus is "Progress and Prosperity," very closely linked to the philosophy of New

England's Puritan work ethic. Both New Mexico's nickname and motto can be directly correlated to tourism. To greater understand tourism we need to look not only into its cause and effects, but also into its origins.

William F. Theobald defines the word "tourism" in etymological terms: "derived from the Latin, 'tornare' and the Greek, 'tornos,' meaning... the movement around a central point or axis. This meaning changed in modern English to represent 'one's turn.'...When the word tour and the suffixes -ism and -ist are combined, they suggest the action of movement around a circle...Therefore, like a circle, a tour represents a journey in that it is a round-trip, i.e., the act of leaving and then returning to the original starting point, and therefore, one who takes such a journey can be called a tourist" (Rothman, *The Tourism of Culture* 15).

In 1998, historian Hal Rothman wrote the first dedicated study of tourism in the West. In the *Devil's Bargains, Tourism in the Twentieth-Century American West*, he "argues that tourism is essentially a devil's bargain, one that promises much and almost invariably fails to deliver on its promises...the strains that tourism development can place on already fragile community bonds and cultural compromises that residents have to make to meet the expectations of visitor" will be both a blessing and a burden (Cited in Wrobel and Long 37). Tourism can bring an economic boom while at the same time overwhelmingly changing the social landscape in uncontrollable, unanticipated, and in irreparable ways (Rothman 10). Governmental officials, designers, and residents must not ignore the role that tourism can play upon a community. An understanding of the structure and dynamics of tourism must play a role in any major community development project like the BioPark, so that favorable economics and quality of life outcomes may

occur for Albuquerque's citizens.

In 1879, Residents of Albuquerque's Old Town were so excited about eastern tourists that the new railroad would bring that they erected an off-center flagpole, added radial walks, planted fifty deciduous saplings for future shade, and constructed a picket fence around the plaza, setting turnstiles at the four corners to collect money from visitors as they arrived (see fig. 19). Thus, on April 22, 1880, at noon a volley of artillery commenced welcoming tourism to Albuquerque. Someone at that time stated, "Today the new civilization of the East is brought into direct contact with the ancient civilization of New Mexico" (Cited in Wilson and Polyzoides 133).

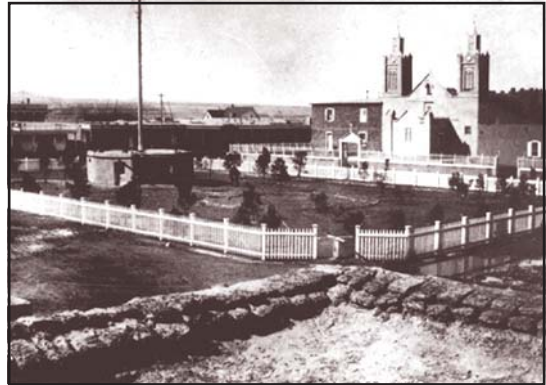


Fig. 19 Looking NW over the plaza, about 1883
(Albuquerque Museum, Cited in Wilson
and Polyzoides 77)

The first type of tourism to develop in the American Southwest was the exotic/romantic cultural or heritage-based tourism which marketed history, scenery, and the mystic past (time). The second type of tourism in the West was recreational in nature and closely tied by the geography of scenic landscapes, packaging the experience of national parks and resorts as an ultimate adventure. After WWII, tourism shifted toward the third type of tourism: entertainment/leisure experiences within the surreal landscapes of Disneyland, theme parks, and gaming locales like Las Vegas, NV. Rothman reflects that subscribing to the concepts of Western tourism further aligned American society with the ideas of Manifest Destiny, the quest for the sublime, and the desires of the individualism of entrepreneurship. The powerful dynamics of tourism also shifted physically when transportation to the West changed from upper-class train travel to middle-class automobile travel.

The impact of tourism upon a community is twofold in its physical transformation. One is from the growth demands of rapid uncontrolled development upon the landscape. The second is the influx of strangers into the cultural framework of the place. Wrobel and Long identify four distinctive audiences based on socioeconomic classes and between races that influenced or were affected by the development of tourism in a multi-cultural community: 1) Native (from the place), 2) Neo-Native (newly arrived or seasonal to the place), 3) Traveler (temporary to the place on business reasons), and the 4) Tourist (taking in the ambience of the place). This creative project will not be able to address “Configuring Ethnicity: The Meaning of Who You Are,” but will take into account these four distinct user groups upon the redesign of the BioPark.

Cause-and-effect, be it pro or con, cities are capitalizing on tourism as a clean industry not only in the West but across the nation. In the 2012, the US Secretary of Commerce and the US Secretary of the Interior co-chaired the *National Travel & Tourism Strategy, Task Force on Travel & Competitiveness* which engaged twelve governmental agencies and stated to the President of the United States, “Our goal is simple yet bold: increase American jobs by attracting and welcoming 100 million international visitors, who we estimate will spend \$250



Fig. 20 ABQ International Balloon Fiesta Park
(Albuquerque International)

billion annually by the end of 2021. We will also encourage Americans to travel within the United States and its territories to see all that our country has to offer” (2). In 2011, the United States already led the world in international travel and tourism revenue and ranked second in the number of international visitors,

spending a record \$153 billion on related goods and services. Thus, the redesign of the BioPark is a must consider international travelers (see fig 20).

The Albuquerque Convention & Visitor's Bureau broke down New Mexico's 2011 travel statistics as follows: 85% of visitors traveled for leisure, 4% for meetings/conventions/seminars, and 11% for business. The top four out-of-state visitors came from Texas with 18.9%, Colorado with 18.9% , Arizona with 8.4%, and California with 5.9%. The top reason for tourists making Albuquerque their destination was cultural and historical opportunities, beautiful scenery and landscapes, and pleasant year-round weather (Albuquerque Convention & Visitors Bureau).

Understanding the statistical impact of tourism is important, but we must also understand tourist typology in relationship to the baseline of future BioPark visitors. The hospitality industry today classifies tourism typologies into two major divisions: "Mass Tourism" for recreational, leisure, or business purposes, and "alternative or niche tourism" which links the diversity of an individual's interests to travel destinations. The BioPark and adjacent amenities redesign could encompass the following "marketable experiences" for today's tourist:

- Adventure tourism: bicycle tours, equestrian tours, water activity tourism, and walking tours. (Recreational and leisure tourism)
- Cultural/heritage tourism: archaeological tourism, art tourism, creative tourism, music tourism, pop-culture tourism, railroad attractions, scenic tourism. (Leisure, business, and niche tourism)
- Educational tourism: eco-tourism, literary tourism, sustainable tourism, wildlife tourism. (Niche tourism)

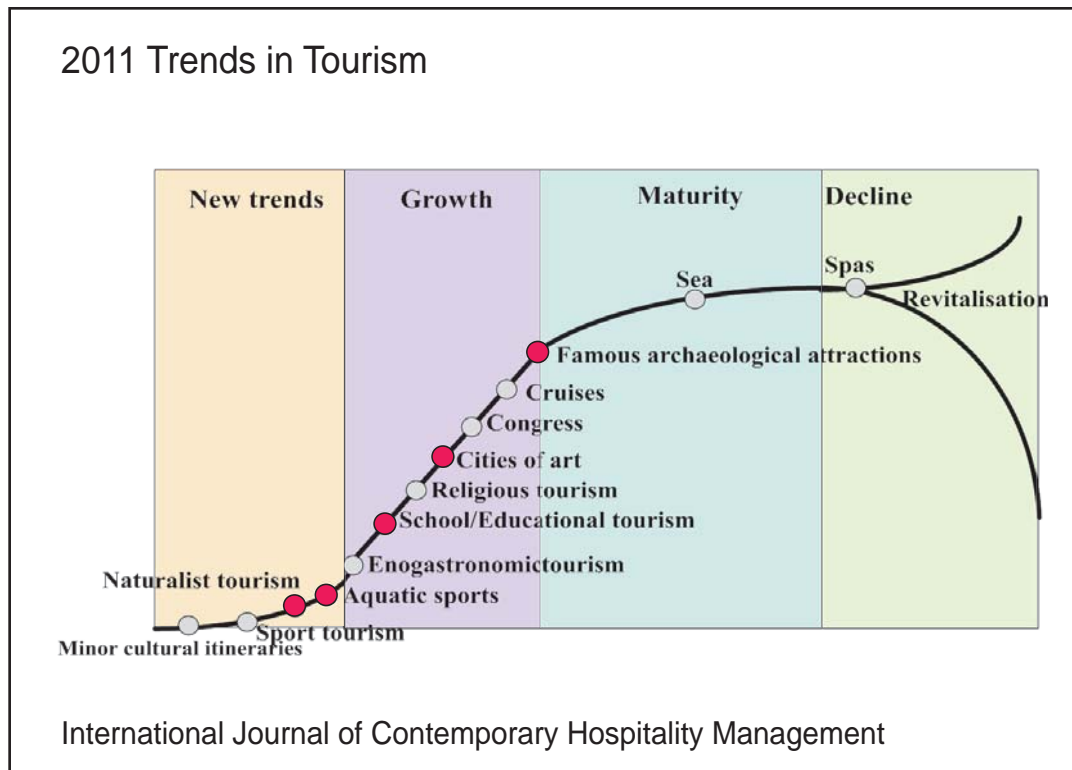


Fig. 21 Changing Trends in International Tourism (Trends in Tourism 2011)

The marketing of tourism is the task of setting trends to predict the future must see/experience destination by staying ahead of the curve. If we compare the 2011 international trends from the *Journal of Contemporary Hospitality Management* we can see that the BioPark's marketable experiences falls very much in line with the apex of growth trends such aquatic sports, school/educational tourism, city art, and famous archaeological attractions. It will be extremely important that the city of Albuquerque measure and consider these industry trends while trying to keep a balance of staying true to the "sense of place" of the BioPark and its surrounding neighborhood. One of the key endeavors in this creative project will be to try to strike a balance between Albuquerque residents and the tourist use of public amenities. Accomplishing this creative project within the timeline of a university semester make it impossible to establish designs based on future trends (see fig. 21) and economic tourism markets for Albuquerque. However, the city should utilize future tourism consultants as part of the design team for the BioPark and adjacent amenities.

Mystique of the West

Several great magical dialogues or stories have played an influential part in the development and popularization of the West and New Mexico specifically. These narratives capitalize on the region's "mystique"--"the aura of heightened value, interest, or meaning surrounding something, arising from attitudes and beliefs that impute special power or mystery to it" (Mystique). Mythologies, folklore, historians, scholars, and myself have broken down the mystique of New Mexico into the following seven major tales that have lured and will continue to entice people to its landscape: Water, gold, adventure, scenic beauty, well being, technology, and enticement of the place.

The Tale of Water: The oral creation stories of the Rio Grande tribal groups: Tiwa (or Tigua), the Tewa, the Towa (or Jemez), and the Keres, today's 19 pueblo tribes, tell a story of how the great drought (1200s-1300s) led their people down from the cliffs into the valley of the river (Horgan 14) (see fig. 22). The Jicarilla Apache have a tale which speaks that "the earth was all dry, except for the four oceans and the lake in the center, where the beaver had dammed up the waters," thus giving the first aura of water to New Mexico's Rio Grande Valley (Erdoes and Ortiz 85).



Fig. 22 Petroglyph of Pueblo Creation Legend, circa 1100 A.D. (Imaheng Naka)

The Tale of Gold: The writings of Friar Marcos de Niza, a Franciscan priest in 1539, talked of seeing cities of gold. These glorious tales of fantastic wealth described Native American treasures called the Seven Cities of Cibola and enticed Spain

to colonize North America. The resulting lust for conquest electrified Spanish explorers and enticed them into a desolate desert region that would become New Mexico. No Native American gold was ever found, for only the fable of Cibola ever existed. Today anthropologists speculate that the mythology arose from the desert dust and reflective golden light of the setting sun onto modest adobe pueblo walls. The coming of the Spanish added another layer to the story of New Mexico. Gradually, the Spanish interwove their architecture, art, religion, music, language, foods, horses, and agricultural practices into the cultural fabric.

The Tale of Adventure: The next charismatic tale spun within New Mexico's literary landscape came from the Anglo/Eastern world of the dime novels and penny dreadfuls (see fig. 23). The publishing firm of Beadle & Company was the first to produce these pulp magazines of half truths and pulp/popular fiction. The heyday of these lurid sensationalized stories was from the 1860s to 1915 (Dime Novels, American

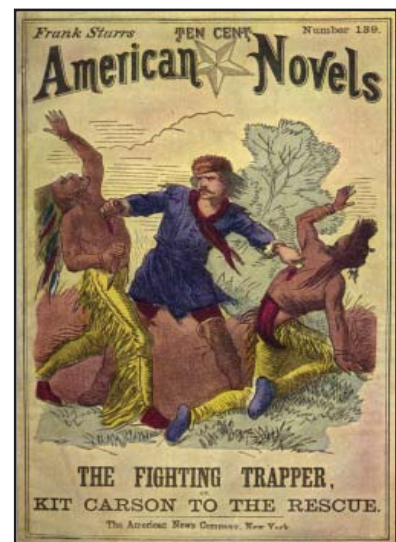


Fig. 23 Cover The Fighting Trapper (Dime Novels [Image])

Treasures). Cheaply produced and wonderfully illustrated, dime novels told the adventures of Kit Carson, Buffalo Bill, and Billy the Kid, providing imagery of a unique Southwest (Kit Carson and Billy the Kid are both legendary New Mexico icons). These mass produced writings brought to light the colorful, exotic, and romantic landscape of the wild, wild West and New Mexico. This legacy still lives on today in western art, tourism, and pop-culture.

The Tale of Scenic Beauty: The great chemistry or chain reaction that occurred “out West” in the late 19th century is a complicated formula that would forever change

our understanding of the landscape. If we analyze the equation that allowed the U.S. to enact the first laws/legislation to protect and value landscapes beyond pure profit margins, we must first examine the component pieces or the elements. Variables are many, and no one answer can stand alone, but the following are key contributors: the land, the naturalists, the politicians, and railroads.

The first element is the land itself. When one stands within the landscapes of the West and New Mexico, the vastness of time and place is at times amazing and overwhelming. Eons of geological and climactic conditions have formed stunning landscapes of contradiction and contrast: that are beautiful yet harsh, timeless yet vanishing, rugged yet environmentally delicate, protected yet a marketed commodity. Finding balance in these dichotomies is a continuing challenge.

The next element were the railroads, which brought writers, cameras, and artists. After the Civil War, technology allowed Americans to travel the rails and explore the scenic landscapes of the West in relative comfort and document what they saw with photographs. Photographers such as Eadweard Muybridge, Timothy O'Sullivan, Edward Curtis, and William Henry Jackson fled the war-ravaged east to document the untouched landscapes and cultures of the American Frontier, before civilization would alter their existence. For the first time, published photographs exposed great numbers of upper and middle-class Americans to the magnificence of mammoth hot springs and geysers (Yellowstone, WY), the mystery of ancient cliff ruins (Canon de Chelle, NM), deeply eroded and colorful canyons (Grand Canyon, AZ), and majestic mountain ranges all in the comfort of their own parlors. (Note: artistic painters will be discussed in the next topic section.)

These images spurred an immense shift away from human fear of nature,

and this transition received great leverage from spiritual manifestoes written by poets and naturalists. No single dogma ruled the religion of nature as God. The powerful writings of John Muir, Theodore Roosevelt, Katharine Bates, John Ruskin (and others) led the way for naturalism and the future environmental movement. Contemplation of the powerful hand (The Creator) lifted to create these transcendental landscapes--so glorious, so spiritually uplifting, so timeless, and so amazingly wondrous--had never before been passionately expressed in both prose and poetry. A unique combination of writers and artists joining with and influencing politicians allowed, for the first time, legislation that set aside and protected land for the purely aesthetic benefit and enjoyment of people. On March 1, 1872, the United States Congress established Yellowstone National Park, setting the stage for a worldwide movement toward the revolutionary concept that scenic beauty was to be valued.

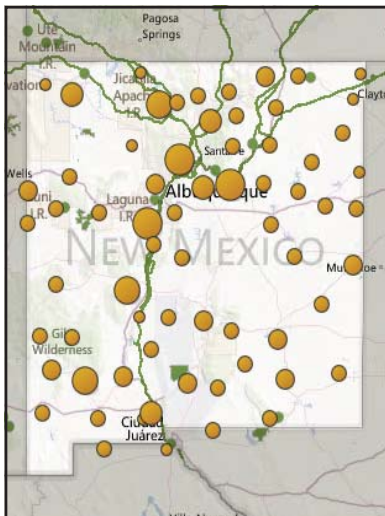


Fig. 24 New Mexico-NPS (NPS)

Today, the National Parks Service has in New Mexico alone 13 National Parks, 1 National Heritage Area, 12 National Natural Landmarks, 46 National Historic Landmarks, and 1,102 sites on the National Register of Historic Places. In 2012, 1,502,808 visitors came to see these landscapes of history and beauty, bring \$ 97 million in to the economy of New Mexico. Under the Bureau of Land Management and National Forest Service, 25 National Wilderness areas exist in the state. In 1924, the 558,014-acres

Gila National Wilderness became the first designated wilderness in the world (National Wilderness Areas in New Mexico) (see fig. 24).

The Tale of Well Being: At the beginning of the 20th century, many physicians

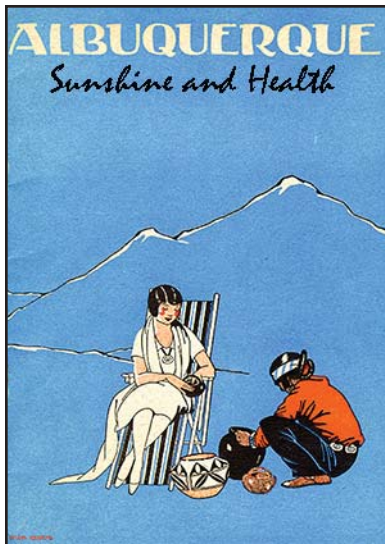


Fig. 25 Health Travel Brochure, 1925 (Southwestern)

and scientists believed or hoped the arid desert air would be a cure for tuberculosis patients. Numerous sanitariums and resorts were established in the state for thousands of health-seekers desperate to escape a disease that killed millions. In 1906, promotional materials from the Bureau of Immigration stressed “only its salubrious climate but also the health of local residents. That the native people of this section experience such wonderful immunity from tuberculosis, especially of the respiratory tracts, must

have its explanation in the very favorable climatic

conditions surrounding.” (Cited in Lewis 46). The clean air and natural mineral hot springs attracted many visitors looking to reinvigorate their health. With the development of antibiotics, this health industry would dwindle, but several sanatoriums would in time evolve into New Mexico’s modern hospitals. New Mexico still attracts health-seekers and senior citizens because of its favorable weather conditions and high quality of living (see fig. 25).

The Tale of Technology: Modern technology came to New Mexico after the Japanese attack on Pearl Harbor, brought the U.S. into World War II. In the fall of 1942, the Manhattan Project was located on a remote mesa near Jemez Springs, New Mexico, that was once the Los Alamos Boys Ranch School. This top-secret project brought the US Army Corps of Engineers, scientific director/physicist Robert Oppenheimer, and thousands of leading scientists to an ancient landscape removed from modernity (U.S. Dept. of Energy). Since the birth of the atomic age, New Mexico has never looked back on its involvement in the science of technological advances. Today, foremost research facilities like Los

Alamos National Laboratory, Sandia National Laboratories, and Intel laboratories are a vital part of the state's economy.

The Tale of Enticement: The final yet continuing tale to be told is the magical pull of enchantment New Mexico has on humanity. The ancient Greeks used term now called "Genius Loci" to describe a place with a special atmosphere or spirit to a particular location. Over the centuries New Mexico's haunting beauty and mystery have enticed and welcomed many strangers to settle there. The state has always been a place of transplanted people who take root in the desert soils. In the 1970s, J.B. Jackson (essayist, cultural geographer, and interpreter of the American-built environment) settled full-time in New Mexico after retiring from teaching at both Harvard and Berkeley (John Brinckerhoff Jackson). Jackson wrote in his essay "Looking at New Mexico," "What New Mexico seems to offer is what it has always offered: the dramatic confrontation between the new and mobile and optimistic human installation on the one hand, and the overpowering "timelessness" of an ancient landscape with its visible cosmic chronology" (66).

I myself was drawn to Albuquerque in the late 1980s for two reasons. One was furthering my education at the University of New Mexico and the other was the wondrous quality of life that the high desert environment offers to a



Fig. 26 New Mexico Landscape (O'Bryan)

photographer. For the next 11 years, I found myself (almost on a daily basis) amazed with the beauty of delicate-white clouds drifting in a blue-blue azure sky, rain that fell from the sky yet never touched the land, mountains turning glowing watermelon-pink as the sun set, gray-sage deserts turning okra and white

with the autumn, and landscapes so ephemeral and ghostly that they are still vivid in my mind as if I am walking in them today (see fig. 26).

The Art of the West

When standing within Petroglyph National Monument (on the west side of Albuquerque), viewing the ancient rock carvings on the basaltic boulders, it is easy to understand that art has always been part of New Mexico. Several distinctive events in history have coincided to create artistic expression, artistic communities, and an international art market that values New Mexico's style. The following is a simplified outline of this history.

The Spanish Conquest and conquistadors brought to New Mexico new types of food, horses, Christianity, modern agriculture and warfare technologies, the Laws of the Indies, musical instruments, and art. Rituals and art supported the religious theater Spanish settlers presented to the Native Americans. The new settlers found that it was not easy to acquire art for all the churches and monasteries that the growing communities in New Mexico needed. Laymen of the Catholic Church started to develop the vernacular art of New Mexico due to the remoteness of their settlements. For over 300 years, this regional folk art has been expressed in woodcarving, tin work, painted glass, weaving, and metal. At the same time, the Native Americans crafted objects of pottery, baskets, rugs, silver and turquoise jewelry, and religious icons needed for their everyday activities. The Indian and Hispanic cultures would mingle over time, creating the exceptional local art of New Mexico and setting the stage for Eastern entrepreneurs to profit from these talents.

In the late 1870s, the Atchison, Topeka, and Santa Fe Railway (AT&SF) hired Fred Harvey to run restaurant cars along their Western routes. The business

quickly grew under Harvey's management style and understanding of what elements were necessary to attract easterners and new immigrants to travel by train. By the 1900s, AT&SF understood that if they sold the West as an idyllic place to visit or settle in, they would increase the number of passengers. Upper-class Americans and artists at this time were visiting Paris/Europe and bringing back to the country ideas expressed in the romantic movement in art and literature. Railroad executives realized that in the West the sense of romance and adventure was still alive. They commissioned artists to travel to the West and New Mexico to paint glorious artworks that would be used in their promotional materials to sell the West. The following are just a few of the painters who at one time worked for the AT&SF: William Haskell Simpson, Eanger Irving Couse, Gray Bartlett, Thomas Moran, Bert Geer Phillips, Louis Akin, Bertha Mezler Dressler, Leslie Ragan, and Joseph H. Sharp (AT&SF).

As previously mentioned in chapter 1, Fred Harvey hired architects Charles Whittlesey and Mary Colter to create grand palaces for passengers along the AT&SF. These hotels were meticulously designed in regional architectural styles ranging from Rustic,



Fig. 27 Interior Fred Harvey Store, Alvarado Hotel, circa. 1905 (Interior).

Pueblo Revival, Mission Revival, and Spanish Territorial, adding to the mystique of the journey. With the expansion of AT&SF station facilities and Fred Harvey Houses/Hotels, travel to the West and New Mexico became a luxurious and exotic experience with improved spotless restaurants, gracious hotel accommodations, gardens, trading posts where one could buy souvenirs, Indian museums, and rooms full of crafts/folk art for sale. Harvey relied on regional traders such as

the Huckels and Herman Schweizer to supply his museums and curio stores (Howard and Pardue, 39) (see fig. 27). In 1902, when the Alvarado Hotel was completed in Albuquerque, local artists and craftsmen also began selling their merchandise to passengers under the shade of the Alvarado's porch as trains

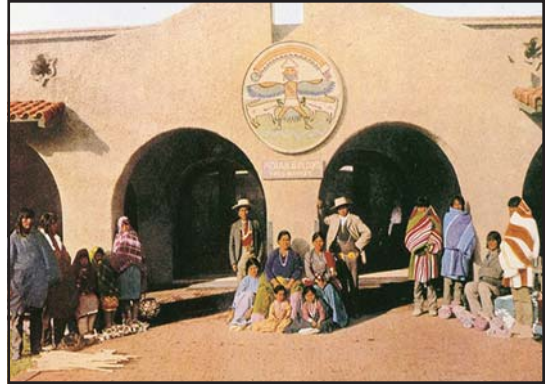


Fig. 28 Alvarado Hotel Porch (Howard and Pardue)

stopped for refueling on their way to Los Angeles. Fred Harvey and the AT&SF marketing tool of ethnic tourism (or the pursuit of local color) were well established by the 1930s (see fig. 28). Governmental guidebooks listed New Mexico as “The Colorful State,” featuring Indian and Hispanic art and culture. To this day, passengers still purchase trinkets, Indian bread, and souvenirs when the Amtrak Southwest Chief stops in Albuquerque every afternoon on its way between Chicago and Los Angeles.

The Atchison, Topeka, and Santa Fe Railroad was not the only business that needed artist commercially. Newspapers, magazines, and books in the 1880s, for the most part, utilized illustrations and art to support the printed word and sell publications. “Men and women with sketch pads, paint brushes, and pen & ink covered breaking news stories, climbed mountains, explored uncharted territories, and recorded the days latest scientific developments” (Taggett and Schwarz 5). Artists might find themselves on a train, a stagecoach, on the back of a horse, a mule or a camel” covering the stories and beauty of the West. This entrepreneurial drive from artists would be tempered by aesthetic inspiration and passion in capturing America’s timeless scenic landscapes--or the sublime--before it was gone. The American art scene was moving west and blossoming on the high deserts of New

Mexico. In 1915, the first of two leading Anglo art societies was established. The Taos Society of Artists (TSA) was formed by six artists: Bert Geer Phillips, Ernest L. Blumenschein, Joseph Henry Sharp, Oscar E. Berninghaus, E. Irving Couse, and W. Herbert Dunton. The second prominent artists' community was the Sante Fe Art Colony that unfolded in the 1920s and 1930s. Its most famous artists were Andrew Dansburg, Randall Davey, Gustave Baumann (see fig. 29), Will Shuster, and Marsden Hartley. These strong groups created and captured the cultural and scenic atmosphere of New Mexico, fostering both creativity and financial success (Jansen).



Fig. 29 Baumann, Procession, 1952 (Baumann)



Fig. 30 O'keeffe, Taos Mountain, NM, 1930 (O'Keeffe)

Another factor in activating New Mexico's artistic environment was the wealthy socialite and art patron Mabel Dodge Luhan, who settled in Taos around 1920 and invited avant-garde friends to visit her home. Bringing to the small village of Taos celebrated artists and writers such as Georgia O'Keeffe, D.H. Lawrence, Andrew Dasburg, Dorothy Brett, Willa Cather, Edward Steichen, Ansel Adams, John Marin, and Paul Strand to name just a few (Sullivan, Michael) (see fig. 30). These artists and many more would lay the foundation for today's thriving art scene in New Mexico, which still captures the contrast between light and desert, textures and

mountains, cultures and time, colors and rivers, etc. In the 21st century, numerous highly acclaimed museums and galleries populate the state, continuing the strong connection between art and the American West.

Landscape Theories Regarding Landmarks, Community Identity, & Narratives

New Mexico and the city of Albuquerque clearly have a rich blend of cultural heritage, historical events, and inspirational landscapes that is extremely complex and fascinating. In the profession of landscape architecture, it has always been crucial that designers take time to understand the makeup “or spirit” of a place. We refer to this as context. To create successful designs, we must understand the dynamics of both the socio-cultural context and biological complexity that envelops a site/place. (Site inventory and analysis will be discussed later in Chapter 2 & 4)

Socio-cultural factors/forces can create guidelines to connect the designer with the multi-faceted components of a city. Amos Rapport, in *House Form and Culture*, discusses French geographer Max Sorre’s term “Genre De Vie” to include, “all the cultural, spiritual, material, and social aspects which affect form” (47). In 1994, the City of Albuquerque held public workshops to determine the special components that make up the sense of place that allows one to identify with the community. “Workshop participants identified the geographic extent of their communities, activity centers, notable landmarks and important streetscapes.... This community-based approach to planning provides a forum for communication between neighbors and the City” (Albuquerque Community Identity Program Final Report 2).

The significant factors in establishing identity are natural environment, community history, cultural characteristics, social context, and the built environment.

Urban theorists Kevin Lynch and Jane Jacobs discuss the need for a city to have a visual order. With Lynchian terminology, we identify landmarks as elements that are “emotional security as well as functional efficiency” (Lynch, *The Image of the City* 83). Lynch next asks the design to combine his elements of the city’s imagery into a sequence of experiences. Jane Jacobs confirms Lynch’s layering of a city’s elements in her closing statement in *The Death and Life of Great American Cities* (1961),

“It may be romantic to search for the salves of society’s ills in slow-moving rustic surroundings, or among innocent, unspoiled provincials, if such exist, but it is a waste of time....Dull, inert cities, it is true, do contain the seeds of their own destruction and little else. But lively, diverse, intense cities contain the seeds of their own regeneration, with energy enough to carry over for problems and needs outside themselves” (448).

In the 1980s, landscape architectural firms and universities began to focus on researching and analyzing the landscape narrative of site/place to inform site-specific design. Matthew Poteiger in *Landscape Narratives, Design Practices for Telling Stories* (1998), defines a landscape narrative as the cumulative process where “layers of history, organized sequences, and inhere in the materials and processes of the landscape...The term landscape narrative designates the interplay and mutual relationship that develops between landscape and narrative” (5). These stories of place or even a missing narrative can play a role in generating a sense of community identity.

Poteiger breaks down landscape narratives into nine types Narrative Experiences, Associations and References, Memory Landscapes, Narrative Setting

and Topos, Genres of Landscape Narratives, Processes, Interpretive Landscapes, Narrative as Form Generation, and Storytelling Landscape.

The Albuquerque BioPark falls into this critical framework in several ways. As the “narrative experience,” it offers a sequence/tour--albeit disjointed--of experiences along the “genres of landscape narrative” of the Rio Grande River (see fig. 31). The existing richness of experiences at the BioPark creates both a “memory landscape” and “interpretive landscapes,” offering both residents and tourists a tangible encounter during a special day or a vacation in Albuquerque. As an oasis, the BioPark presents a pastoral setting and center for education which can establish a “narrative setting and topos” or sense of nostalgia for its visitors. The intention of this creative project is to build upon these four existing landscape narrative types while integrating additional “interpretive landscapes” and “storytelling landscapes” along the Rio Grande River and future public enhancement areas (see ch. 4 & 5). Just like the “Dime Novels” of the West, one must read and reflect on the stories that are told and will be told from the history, drama, and adventures the BioPark site promises.



Fig. 31 Rio Grande River Narrative
(Author's own photograph)

Placemaking

During the 1950s urban design emphasized bigger, faster infrastructure and sprawl. Several writers became a key force in creating a foundation for analyzing spaces in relationship to how people interact with a city or a site/place: Christopher Alexander, J.B. Jackson, Allan Jacobs, Jane Jacobs, Kevin Lynch, Amos Rapoport, Edward White, and William H. Whyte. Their ideas redirected

governmental mandates and policies that were creating cities for automobiles, shopping malls, and suburbia to step back and address the livability needs of the people. By the 1990s and 2000s, these concepts had evolved from scholarly writings into environmental design projects creating greater cohesion, and inviting sociable public spaces. This multi-faceted design approach of capitalizing on celebrating a location's history, inspiration, art, culture, landmarks, landscapes, and events is termed placemaking. In developing a social life to public spaces that promote people's well-being and happiness, placemaking can be both a method, a professional practice, or a philosophy.

Embedded meanings in a place are crucial in connecting people with a meaningful memory narrative of the space, but they are is not a complete solution to solving urban problems. Ronald Fleming in *The Art of Placemaking* (2009), discusses the failure of under-used and empty major public spaces such as New York's Federal Reserve Park and Albuquerque's downtown plaza. Fleming states, "The original designers of these spaces often combined arrogance about asserting and untraceable design image with a profound naïveté about how people actually use public space, and no recognized memory of what happened there before" (19). Street furnishings, art, and interpretive events are functional amenities needed for placemaking, yet Fleming recommends that urban design strategies be broader in scope.

Fleming's directive design objectives for successful placemaking are as follows:

- Orientation: research that reveals multiple layers of meaning that reinforce the design metaphors through vigorous interaction with stakeholders.
- Connection: holistic meaning throughout the site and integration with the surrounding context.

- Direction: developing a visual clarity that links design elements together to create navigable spaces.
- Animation: building a complexity of uses and users to foster for activities both in and around the site.

Based on my assessment, as site specific to the BioPark, I would insert five additional design objectives to Fleming's approaches for successful placemaking.

- Breathers: amenities that allow users to feel safe, protected, leisurely, and at ease from social pressures and climactic conditions.
- Flow: fluid sequencing of active nature and human participation with nature.
- Mystery: landscapes ever changing and ever unfolding the tales of time.
- True Materials: sustainable design practices that incorporate local materials and craftsmen during site construction.
- Economics: incorporating the development of jobs both during and after construction. Design teams seldom address this important aspect. It is crucial that designers work with city leaders, businessmen, universities, economists, and the general public to develop creative alternatives to assist in dealing with the prosperity of a place.

Currently some of the most successful designs rooted in the theories of placemaking are:

- South Cove/Battery Park City, New York; design collaboration with Mary Miss, Stanton Eckstut architect, and Susan Child landscape architect.
- Bryant Park, New York and National Gallery of Art Sculpture Garden, Washington D.C.: design by OLIN Landscape Architecture/Urban Design/Planning.

- When utilizing placemaking techniques, landscape architects, architects, and planners must walk a fine line between creating iconic spaces or creating false Disneyland kitsch. Disneyland functions very well as an amusement park but reads falsely in the context of the urban environment (see fig. 32).



The word placemaking is considered a relatively new term in design vocabulary, yet in New Mexico its roots are thousands of years old. Present day New Mexico has evolved from three distinctive cultures; Native American/Pueblo, Spanish/Mexican, and Anglo-American. Each group built its communities guided by physical attributes, economics, political forces, and cultural beliefs. All three created shared common spaces for public gathering. These social constructions can be categorized in three distinctive traditions of placemaking (Wilson and Polyzoides 9-95).

Center place-Native American/Pueblo:

- Village orientation guided by the four cardinal points and dominant landforms. Typical orientation north to south (see fig. 33).

- Construction pattern used blocks of rooms organized by clan associations around a sacred kiva and ceremonial open space in the center of the village.

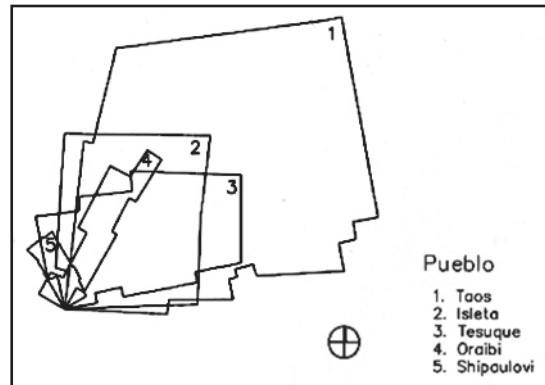


Fig. 33 Center Place: Native American/Pueblo Plans, 2011 (Sanjuan with Polzoides, cited in Wilson and Polzoides pg. 94)

- Construction grew organically with random gaps between house clusters generating circulation patterns.
- Spatial enclosure is intimate in scale.
- Geometry was angular and linear.
- This space was utilized for celebrating rituals and public festivals, and symbolized a spiritual connection to the earth.
- Daily life thrived around the centers.
- Under Spanish rule, Catholic churches were constructed adjacent to the center place while displacing the native ceremonial kivas to be hidden.
- Anglo-American influence developed these spaces as tourist destinations.

Plaza-Spanish/Hispanic:

- Village organized based on north-south connection to Mexico City. Little

relationship to landforms or terrain (see fig. 34).

- Construction pattern derived from the Laws of the Indies, which required a Catholic church, military garrison, centralize market space/plaza, and limited access to facilitate fortification.

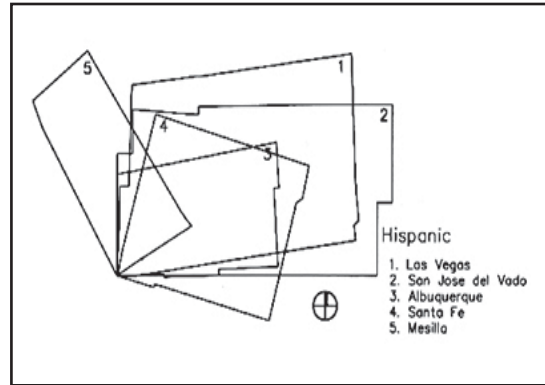


Fig. 34 Plazas: Spanish/Hispanic Plans , 2011
(Sanjuan with Polzoides, cited in Wilson and Polzoides pg. 94)

- Spatial enclosure is intimate in scale.
- Military/colonization grid geometry.
- Construction grew in a predetermined pattern with a grid circulation.
- This space was utilized for market days, public festivals, and military fortification as needed.
- Religious and governmental center.
- Daily life thrived around the plaza.
- Anglo-American influence developed these spaces as tourist destinations.

Squares-Anglo-American:

- City/town organized based on east-west connection to the East. No relationship to landforms or terrain.
- Construction pattern derived from military needs of a territorial outpost or later from corporate planning of the railroads.
- Spatial enclosure is larger in scale.

- Speculative/commercialization development grid geometry.
- Construction grew in a predetermined pattern with a grid circulation. Based from the US Land Ordinance of 1785 (see fig. 35).
- The square was utilized for institutional buildings, businesses, military parade grounds, civic celebration, and monuments.
- Commercial and governmental center.
- Daily life thrived around the square until the car-culture decentralized and spread out urban population.

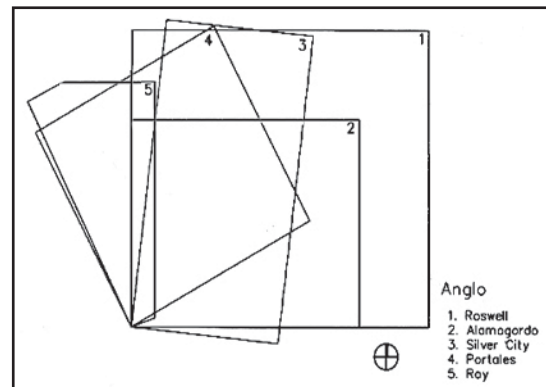


Fig. 35 Squares: Anglo-American Plans , 2011
(Sanjuan with Polzoides, cited in Wilson
and Polzoides pg. 94)

New Mexico's grand tradition of centralized public spaces was drastically altered by tourism, the car-culture, and sterilization of Post-War Modernism

design. With the present day resurgence in grassroots community activism and urban design concepts shifting toward placemaking, the return of plazas/common ground is reoccurring throughout New Mexico (Wilson and Polyzoides 109).

Landscape Architectural Design Approaches and Composition

Albuquerque has suffered over the last sixty years from uncontrolled urban sprawl, loss of cultural identity, and an Interstate System that has bisected the eastern mountain ranges and divided the city into the four cardinal points. This creative project endeavors to reconfigure parts of this once-well-thought-out community into a more cohesive and pedestrian-friendly environment. To prepare

for the design phase of this creative project, I needed to supplement my design knowledge.

With this intention in mind, I examined the following professional literature:

- *A Landscape Manifesto* by Diana Balmori
- *Earthworks and Beyond (3rd ed.)* by John Beardsley
- *Foundations of Landscape Architecture, Integrating Form and Space Using the Language of Site Design* by Norman Booth
- *Urban Flotsam, Stirring the City* by Chora/Raoul Bunschoten
- *Urban Composition, Developing Community through Design* by Mark C. Childs
- *Form and Fabric in Landscape Architecture* by Catherine Dee
- *New Waterscapes: Planning, Building, and Designing with Water* by Herbert Dreiseitl, Dieter Grau, and Karl H.C. Ludwig
- *Geometry of Design, Studies in Proportion and Composition* by Kimberly Elam
- *Landscape in Sight* by J.B. Jackson
- *Great Streets* by Allan Jacobs
- *With People in Mind: Design and Management of everyday Nature.* by Rachel and Stephen Kaplan and Robert L. Ryan
- *Oudolf Piet, Landscapes in Landscapes* by Noel Kingsbury
- *Landscape Design Promenades* by Jacobo Krauel
- International Making Livable Cities, Website-Suzanne and Henry Lennard
- *Mary Miss Making Place* by Mary Miss and Chrisian Zapatka (also her Website)
- Project for Public Spaces (PPS), Website-Fred Kent, Norman Mintz, Jay Walljasper, and team
- *Allain Porvost, Invented Landscapes* by Michel Racine
- *City Comforts: How to Build an Urban Village, revised* by David Sucher

- *Garden and Climate* by Chip Sullivan
- *Path-Portal-Place, Appreciating Public Space in Urban Environments* by Edward White
- *The Social Life of Small Urban Spaces* by William H. Whyte

In my assessment of these materials, I found that they could be categorized by three basic approaches: review of designed landscapes, design components, and design concepts. The first was an examination of existing landscapes either from the viewpoint of the designers' intent or analysis by a third party. Allain Provost's insights on what he calls the fourth nature of landscapes is extremely helpful:

“The fourth nature is the recomposed nature. The discussion between landscapers supporting neo-classicism and those supporting neo-arcadism, will continue for a long time to come but will always be limited in its scale; ecological theoreticians will be able to continue to hold forth...Our roots of the Art of Gardens are set in these agrarian landscapes, extraordinary geometries, serene or tense, adjusted to the lie of the land”
(Cited in Racine 17).

I found the unique sense of design, “fourth nature” that Provost uses is a blending of French neoclassical sensibilities juxtaposed with the crafting of ecological systems making a site both artistically balanced and extremely harmonious. Provost goes on to say that, “This fourth nature shall not be the preserve of the landscape architect alone but also that of the scientists who will have finally taken into account and assimilated the poetry, sensibility and emotion to bear concepts and proposals. One may dream!” (Cited in Racine 18). I strongly

agree with Allain Provost that landscape architects must interface with scientists if the ‘fact’ of nature is to succeed alongside artistic expression.

Piet Oudolf, Mary Miss, Allain Provost, Chora, and Jacobo Krauel’s works and writings were inspirational in their mastery of spatial design and detailing of materials. Chora’s research and diagrammatic modeling of spatial patterns and operational uses of sites reinforced my strong belief that contextual analysis is crucial for good design. Chora theorizes that a city is made up of frames or galleries of exhibits. The designer is the curator and caretaker and invites people to participate in this constructed scenario. Sequencing of landscape rooms/galleries and framed viewsheds will play a crucial part in redeveloping the BioPark, and Piet Oudolf’s painterly use of plant material sets the style I would like to incorporate into the softscape of my creative project. *Great Streets, Form and Fabric, Foundations of Landscape Architecture*, and *Garden and Climate* helped me establish criteria and design guidelines, whereas *International Making Livable Cities, Project for Public Spaces*, and *City Comforts* made me realize that good ideas and design components/pieces should become too formulaic and must work more specifically with site contextual issues.

Balmori, Dee, Elams, and White’s design sensibilities create a wonderful framework for artistic compositions. I am especially interested in Dee’s expansion of Kevin Lynch’s urban theories into more detailed elements linking landscape as artistic expression. She refines paths into typologies of rhythm and kinetic experiences, edges into thresholds and transitions that embraces and announces a passage, districts into spatial sequencing, notes into a glossary of art and social interaction, and landmarks into foci of “Genius Loci”. Balmori and Sullivan’s connections between climate, geography, and history made me realize the necessity and common sense in developing spaces utilizing environmental systems

while at the same time playing with whimsical forms. This creative project has six key design development concepts (see pp. 14-15) which aspire to employ just a fraction of the art and sensibilities of these talented designers and writers.

Cultural Corridors (El Camino Real, Railways, and Route 66)

So far, this creative project has talked about the historical importance of three major circulation corridors that connected Albuquerque to the rest of the world. Over time and changing modes of transportation, these corridors have become faded remnants of their past glory. The El Camino Real and Route 66 have shifted and been rerouted through Albuquerque several different times, but in general the city considers present day 4th Street (El Camino Real) and Central Avenue (Route 66) the most contiguous matching routes. The railways have pretty much stayed in the same location running parallel to 2nd Street adjacent to



Fig. 36 Route 66 Sign (Route 66 Sign)

downtown, but have limited passenger usage due to the displacements caused by the airline industry. Yet these remnants offer Albuquerque a passageway between the past, present, and future heritage of the city (see fig. 36).

The mapping and redesign of cultural corridors is a growing phenomenon across America and in the field of landscape architecture. Regional multi-state systems, governmental agencies such as the National Park System, and metropolitan cities are finding that celebrating pathways into history can lead to invigorating places and communities both economically and socially. In chapter

3, I will discuss the topic-related case studies of Chicago's Michigan Avenue and Indianapolis' Cultural Corridor.

Albuquerque has a great opportunity to weave into its future an urban fabric that celebrates the dusty romance of the trail, the quirky allure of roadside kitsch, and the potential to entice passengers to travel the railways again. A journey will create memories, and remembering is a journey throughout a lifetime.

Cultural Connectivity Through Public Art

In *The Timeless Way of Building* (1997), Christopher Alexander writes,

“In early times the city itself was intended as an image of the universe-its form a guarantee of the connection between the heavens and the earth, a picture of a whole and coherent way of life.... It shows each person his connection to the world in terms so powerful that he can re-affirm it daily by using it to create new life in all places round about him” (348).

The history of Albuquerque has always been connected to the earth, sky, and a mixture of cultural beliefs as it is manifested in public art. This connection to art within the landscape began with the 1000 B.C. petroglyphs on the West Mesa and continues with newly completed pieces like the *Aluminum Yucca* a 22-foot-tall sculpture created by artist Gordon Huether from salvaged fuel tanks from F-15 aircraft. At night, the illuminated panels are powered up from the solar tiles, creating a soft colorful presence along I-40's eastern entrance into Albuquerque (see fig. 37).

In 1978, the city passed the *Art In Municipal Places Ordinance*, which provides 1% of General Obligation Bond Funds for the creation and installation of public art.



Fig. 37 Public Art, 'Aluminum Yucca, 2004
(Albrecht)



Fig. 38 Public Art, 'Tile Mural, 2011
(Author's own Photograph)

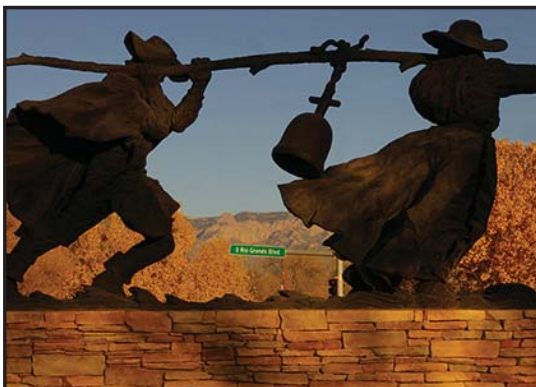


Fig. 39 Bell CarriersI, 2011
(Author's own Photograph)

This collection has grown to more than 800 pieces (see pl. 8-9). "The City of Albuquerque's Public Art Program gives visual form to the community's diverse cultural heritage, supporting a broad sweep of artistic expression" (*City of Albuquerque Public Art Program 3*) (see figs. 38 & 39).

Albuquerque has recognized multiculturalism and heritage preservation as a priceless strength of the community fabric that define and enrich the city's quality of life. Under the guidance of the Mayor and consultants the Capital Implementation Program Department has developed, the City of Albuquerque Cultural Plan, which was managed by Gordon Church. Art and culture are the pride of the city's identity. This plan states, "The following ten features define a culture's identity and should be preserved: Language, customs, architecture, arts & crafts, ethnic heritage, history, religion, landscapes, celebrations, and food" (Cultural Plan 2013).

Key objectives from this plan are:

- Make cultural events accessible to all residents through programming of performances, public exhibits, events, and activities in neighborhoods throughout the urban area.
- Make effective use of existing public and private facilities throughout Albuquerque that can accommodate cultural exhibits and events.
- Develop policies to promote equitable access to public facilities by local artists and cultural organizations.
- Include a cultural component in all Neighborhood, Sector Development/ Redevelopment Plans.
- Promote local arts and culture as a key component of Albuquerque's economic well-being.
- Capitalize on the unrealized economic potential of the arts.
- Encourage the installation of public art ("Cultural Plan").

Public art has been strategic in the connectivity of the city's visual presence. This heritage has developed over a period of thirty-five years of creating places for powerful expression of life. Slowly, these installations and the City of Albuquerque Cultural Plan are beginning to evolve into corridors of community identity. "The process of unfolding goes step by step, one pattern at a time. Each step brings just one pattern to life: and the intensity of the result depends on the intensity of each one of these individual steps" (Alexander, *Timeless Way of Building* 384).

Recreational and Environmental Corridor

In the early 1970s, Kevin Lynch contributed to a Rural/Urban Design Assistance Team (R.U.D.A.T.) Study of the City of Albuquerque. Findings of this study included recommendations that the City of Albuquerque reconnect cultural and recreational development connections to the Rio Grande River, after years of turning its back to the river. This simple statement gave credence to the city for cultivating the Albuquerque Biological Park. In *Good City Form*, Lynch also discusses the spatial patterns in a city to multiply positive distribution of open space.

Albuquerque's BioPark offers tremendous opportunities for further evolution based on Lynch's original recommendations. "Open spaces should be concentrated and continuous, in order to 'give form' to the remainder of the city. Thus they will be linked together, and by their size they will afford a true relief to crowded city conditions" (Lynch, *Good City Form* 436). Utilizing Lynch's premise of clustering open space along a corridor spine, Albuquerque should reconnect existing isolated cultural open spaces of the San Gabriel State Park, Biological Park, Tingley Beach, Rio Grande Zoo, and the Rio Grande Nature Center to the waterfront of the Rio Grande River.

In addition to Lynch's ideas regarding connectivity of open space, the Rio Grande River offers a reference point to the urban dweller's image of the city. "We are continuously engaged in the attempt to organize our surroundings, to structure and identify them" (Lynch, *The Image of the City* 90). Lynch classified these visual elements of human orientation to city form as: paths, nodes, edges, districts, and landmarks. A clear, coherent reorganization of how Albuquerque uses the Rio Grande River would create an environmental edge and recognizable landmark

elements, which would facilitate the hierarchical structure of how individuals relate to the city. This greener approach to the river would also connect with the directives found in *Trails & Bikeways Facility Plan 1996*, (Albuquerque 21), the Middle Rio Grande Conservancy District (MRGCD) network study of arroyos corridors (See *Trails Map Albuquerque & Bernalillo County 1996*), The City of Albuquerque and the County of Bernalillo-Planned Growth Strategy 2004, U.S. Army Corps of Engineers (See *Environmental Assessment for the Middle Rio Grande Bosque Restoration Project* June 2011), and City of Albuquerque's--*ABQ The Plan: The Rio Grande Vision 2012*).

The Rio Grande River offers the city of Albuquerque both a recreational green oasis and an environmental opportunity to restore a life-giving resource that is threatened by system collapse. In 2007, the World Wide Fund (WWF) placed the Rio Grande River on its top 10 most endangered rivers list. "The conservation group said that pollution, global warming and rampant development could destroy some of the world's most iconic rivers in the coming decades, threatening to wipe out thousands of fish species and cause severe water shortages" (WWF). Even though this creative project cannot fully address this environmental crisis, increased and more informed awareness will help in directing demonstration and interpretive nodes within the BioPark, along the Rio Grande corridor, and adjacent properties. If this project becomes viable, the design team should hire special environmental consultants to help the landscape architects in their decision/design process.

Environmental Concerns

The BioPark acts as an interface between the Rio Grande River, Bosque/Riparian habitat, and the Grassland/Shrub Desert Mesa habitat. This ecological transition zone is one of the most environmentally rich ecosystems in New Mexico.

Due to population growth and sprawl invasive exotic species, dewatering of aquifer, pollution, flooding, climate change, sedimentation, channelization/engineering impacts, shifting hydrology, agricultural irrigation, dumping, commercial harvest, increased hardscape/run-off, over consumption of water use, and lack of river flow, the Rio Grande River is literally vanishing. Low water levels at the river delta has devastating Texas and Mexico's ecosystems, causing salt water to enter and ocean species to displace freshwater

fish. Dams and other construction along the Rio Grande River are destroying the habitats for 69 fish species alone by altering the river's natural ebb and flow (WWF) (see fig. 40). On a more positive note, the BioPark's Aquarium facility and staff are working with multiple government agencies and environmental organizations to propagate and reestablish the endangered Rio Grande silvery minnow (see fig. 41). In 2005, the Interstate Stream Commission and the City of Albuquerque has opened the \$1.7 million state-of-the-art (semi-natural setting) Los Lunas Silvery Minnow Refugium (Silvery Minnow

Refugium). This progressive approach and other habitat initiatives of caring for the river needs to be celebrated as part of the redesign of the BioPark.

On the banks of the Rio Grande River environmental concerns are twofold.



Fig. 40 Dams & Diversions Along the Rio Grande (Dams)



Fig. 41 Silvery Minnow Refugium (Los)

First is the removal of non-native/invasive exotic species, and second is the reestablishment of native vegetation. Guidelines for native vegetation have been well established and can be found in the following materials: *Plants for Natural Gardens & New Mexico Gardener's Guide* by Judith Phillips, and *The Complete How to Guide to Xeriscaping* by the City of Albuquerque. Additional landscaping precedents have been established by the *Middle Rio Grande Bosque Initiative: FY 2009 & 2002 Projects*, whose goal is “development and implementation of an educational curriculum that focuses on the importance of the cottonwood bosque/ riparian habitat and ways in which community members can work toward enhancing, restoring, and saving the native riparian forests. Conservation easements will also help to facilitate habitat restoration in the floodplain” (Rio Grande River).

Additional environmental and health and safety concerns occur along the Rio Grande River due to its fluctuate nature. The river is considered dangerous and unpredictable due to the shifting and flow of the watercourse. Designing for these environmental concerns will be not be easy and in some cases extremely experimental. Yet this will be the key to providing wildlife and natural vegetation habitats. The City of Albuquerque will need to utilize environmental and biological consultants as part of the design team if the river is to regain it's health. My creative project seeks to activate the western edge of the BioPark by demonstration and celebration of environmental restoration, environmental education, historic heritage, and public art opportunities along the Rio Grande River corridor/open space.

Governmental Planning Documents

The review of over thirty local government-planning documents generated a significant understanding of the BioPark's evolution toward establishment, construction,

and improvement of site conditions. This documentation contributed to the following crucial design guidelines for future development of the facility in relationship to the needs of the city:

- Celebrate the transitions between the built environment and nature. Weave the wild, natural, and restoration areas into the mosaic of corridor improvements (Albuq., *ABQ The Plan: The Rio Grande Vision 2012* 1).
- Specialty Activity Centers (BioPark designation) are to provide unique recreational and entertainment opportunities (Albuq., *Albuquerque/Bernalillo County Comprehensive Plan, as Amended 2002* 1-29).
- Development of a clearly defined connection to Old Town and Downtown to improve the economics of tourism.
- Conservation of water usage by careful plant selection and water harvesting.
- “Continue positive relationships with Neighborhood Association (Albuq., *Albuquerque Biological Park Transition Report 1999* 38).
- “Continue to work on resolutions for parking, traffic problems, and appropriate access to BioPark facilities” (Albuq., *Albuquerque Biological Park Transition Report 1999* 38).
- Expand educational programs to incorporate science and conservation education within APS (Albuquerque Public Schools) and in partnership with UNM and NMSU facilities and college credit courses.
- Increase the connections of art, culture, and an environment of learning that already exist within and around the BioPark.
- Provide opportunities for increased recreational uses that will further provide linkages to the existing trails and bikeways system. “Trail corridors will connect

open areas and link the open space network. Mesa arroyo and valley irrigation ditch systems serve drainage, flood control and irrigation needs, and may also provide trail corridor rights-of-way. The arroyos identified in the *Facility Plan for Arroyos* present opportunities for recreational trail use“ (Albuq., *Albuquerque/Bernalillo County Comprehensive Plan, as Amended 2002* I-13).

- “Promote cultural development and sense of community” and acquire land acquisitions contiguous to the BioPark and Rio Grande corridor” (Albuq., *Albuquerque Biological Park Transition Report 1999* 39).
- Develop “park once and walk” activity nodes of multiple destinations during the course of a day to promote significant pedestrian activity (Albuq., *Albuquerque/Bernalillo County Comprehensive Plan, as Amended 2002* I-30).
- Restore, preserve, and protect important historic sites and archaeological resources. (Albuq., *Albuquerque/Bernalillo County Comprehensive Plan, as Amended 2002* I-42).

These 11 major design guidelines were derived from governmental mandates and acted as a template for the BioPark and adjacent amenities redesign.

This phase of the creative project allowed me to gain greater perspective and awareness of the contextual elements of cultural layers, environmental sensitivity, infrastructure issues, stakeholder diversity, and the element of time upon the site. In the exploration of these researched topics, the evolution of my design concepts were beginning to form a framework based on a “sense of place.” I found that the complexity of this site and its historical context, coupled with the fields of landscape architecture and ecology, began to present a breakdown of pairings that were rich in context and meaning, but acted as isolated elements. To gain greater understanding of this issue, I next developed a list of six case studies (see ch. 3) that would help refine the final design by analyzing built environments, cultural programs, and new technologies..

Chapter 3 Case Studies

The complexity of the contextual design in relationship to the future needs of the BioPark and the City of Albuquerque required reviewing a wide variety of case studies. The assessment process included identification of strengths and weaknesses of the sites by evaluating the content of numerous publications, with a specific look at usability and environmental challenges and design interventions. Findings from this review process offered insight for conceptual development of the BioPark and the redesign of adjacent amenities.

In total, 16 sites were reviewed, from the following categories: botanical gardens, carousels, environmental corridor systems, alternative architectures, public spaces, and public art programs in the landscape. In addition to strengths and weaknesses of each site these reviews provide general data, and each end with a briefing on the most relevant content for consideration in the design of the BioPark. Note: these case studies are arranged in alphabetical order and are not intended to be hierarchical.

Botanical gardens

The first botanical gardens were the Italian physic gardens in the 1500s created for scientific/academic study of medicinal plants. The university of Oxford botanic garden, established in 1621, promoted learning and the glory of God (The History of Botanic Gardens). Two current botanical gardens in the United States

that offer valuable precedents for this creative project are the Missouri botanical Garden and the Arizona-Sonora Desert Museum.



Fig. 42 Missouri Botanical Gardens--St. Louis, MO, 2009 (Author's own Photographs)

Missouri Botanical Garden--St. Louis, MO

The Missouri Botanical Garden was founded through a bequest of Henry Shaw. The garden was one of the first of its kind in the United States and in 1971, was listed as a National Historic Landmark. It is considered by some one to be of the top three public gardens in the world. Over the years, no one designer or gardener alone has created this amazing botanical garden, it has evolved through time and care from many hands. The visitors' spatial experiences in the gardens our one of grand vistas, enclosures or garden rooms, waterways, and greenhouses/buildings. Designed in the European horticultural tradition the garden

displays a very comfortable and personable touch, featuring over 30 garden areas with wonderful colorful seasonal displays of plant material and charming follies (see fig. 42) (Missouri Botanical Garden).

- General Data: Opened to the public in 1859

750,000+ visitors in 2012

79 acres of horticultural displays

40+ sculptures on campus

Over 16,000 taxa of living plants

1980--Shaw Nature Reserve 2,441 acres, Directive: native habitat management, restoration, recreation, & education

1983--Linked to Metropolitan Zoological Park & Museum District
- Mission: “To discover and share knowledge about plants and their environment in order to preserve and enrich life” (Missouri Botanical Garden).
- Strengths: Internationally renowned research, educational, & science facility. Award-winning implementation of greater sustainability through the development of water harvesting, pervious pavement systems, recycling, LEED certification for existing building operations and maintenance, hydration stations, electric cars charge station, and interpretive/educational displays.
- Weaknesses: One main entrance is visually overwhelmed by parking. Wayfinding, orientation, and circulation patterns need improvement.
 - Limited conservation watering practices.

- Assessment: Ecological restoration, habitat management, and sustainability initiative are the key design patterns worth exploring as a model for the BioPark.

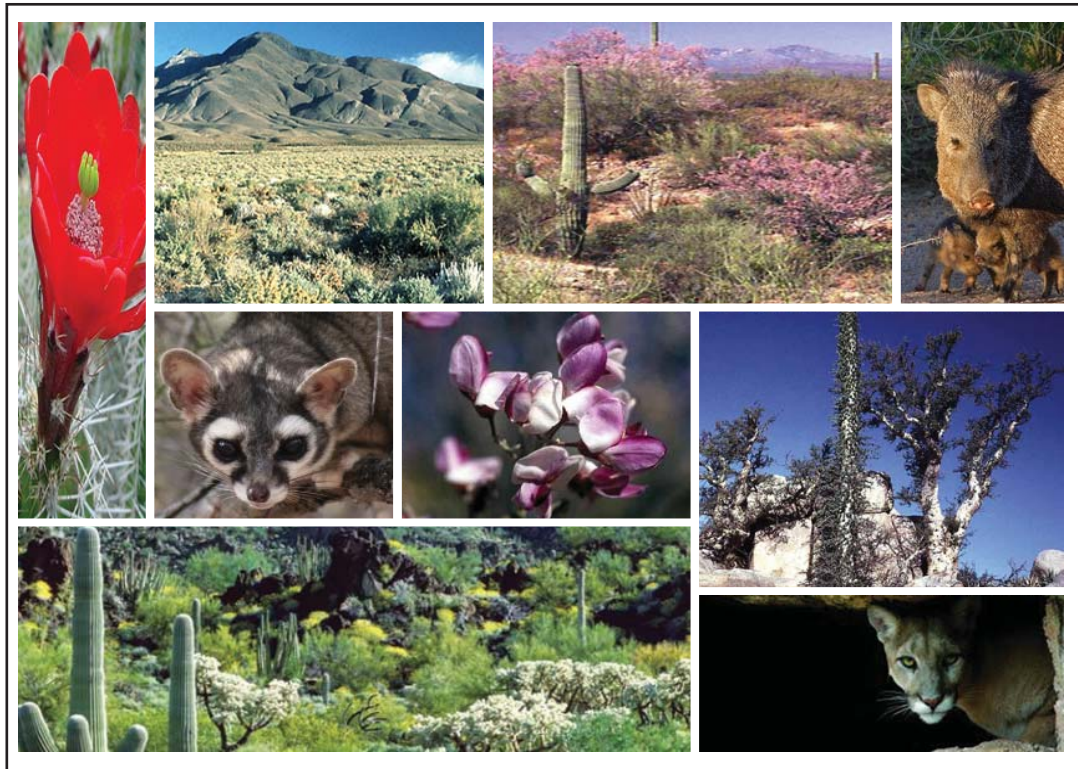


Fig. 43 Arizona-Sonora Desert Museum--Tucson, AZ, (Arizona-Sonora)

Arizona-Sonora Desert Museum--Tucson, AZ

The Arizona-Sonora Desert Museum began with the vision of William Carr (naturalist) and Arthur Pack. After years of working to protect wildlife and their habitats, Carr moved to the Tucson area where he found a general misunderstanding and disregard for the desert environment by the general public. Working with Pack (conservationist and editor of *Nature Magazine*) and benefactors a nonprofit organization was established for the conservation, research, and advancing scientific understanding of the Sonoran Desert to shape people's sense of stewardship. From these origins and with the purchase of acreage west of Tucson the Arizona-Sonoran Desert Museum had its beginning. Nicknamed "The Desert Ark," the collections

consist of 2,744 animals, an estimated 72,000 plants, (most in the natural desert areas not assessable to the public), and 14,482 rock/mineral specimens which including 2,068 fossils. This 360° desert ecosystem experience immerses in and focuses the visitor's attention on the whole-organism and community biology of the Sonoran Desert, while at the same time striving to educate the viewer (see fig. 43) (Arizona-Sonora Desert Museum).

- General Data: Opened to the public in 1952
 460,000.+ Visitors in 2012
 98 acres of Sonoran Desert displays of plants & animals
 Ironwood Gallery (limited sculpture, very literal)
 Over 1,217 plant taxa of living plants (21 ac.)
 1980--Earth Camp, Outdoor learning and recreational
 experience for middle & high school students and educators.
 (Focuses on earth science research and biological and
 cultural conservation.)
- Mission: “To inspire people to live in harmony with the natural world by
 fostering love, appreciation, and understanding of the Sonoran Desert.”
- Strengths: Not a “museum” in the usual sense, it is an unparalleled immersion
 into the Sonoran Desert, showcasing its spectacular views, climatic conditions,
 and rugged terrain.
 - Cultural, ethnology, and art/craft of the region.
 - Aesthetically pleasing integration of natural topographic features.
 - Well thought out circulation pattern of inter-connected loops and dual
 entries with one focusing on cultural activities and the other focusing on
 habitat/environmental activities.

- Educational outreach of interdisciplinary studies: botany, ethnobiology, ornithology, mammalogy, herpetology, invertebrate biology, ecology, and earth sciences.
 - Excellent look-out patio to watch and contemplate the changing desert experience.
 - Ocotillo Restaurant a popular destination for Tucson residents and encourages visitors to rest for a while and extend their stay.
- Weaknesses: Desert experience is amazing, but harsh climatic conditions and rugged terrain can limit the visitors experience with temperatures ranging from 120°F to below zero, with average precipitation of 14.68 inches.
 - In 1984, the Desert Museum went 81 days without rain.
 - Surreal and aesthetically unpleasing drinking fountains plopped into a natural setting.
 - Very limited shade and rest areas along the trails.
 - Assessment: The key design pattern derived from this case study is the extremely well executed integration of biological/garden and zoological habitats into the natural environment. This holistic approach has great potential as a model for the reorientation and integration of the BioPark with the Rio Grande River and Bosque.

Carousels

In the 1860s, Great Britain and Germany developed the first steam-driven amusement rides known as “Gallopers.” The golden age of gallopers/carousels

was 1890 to 1920s in Europe and America. During that time, carousels were considered “state-of-the-art” entertainment with their music, lights, mirrors, sculptures, paintings, and movements all combined to create a surreal dreamlike world (Anderson 7). In the early 1900s, one leading indicator of a town’s prosperity was to have a park with a carousel. Carousels became common places for social interaction and community landmarks. With the onset of the Great Depression during the 1930s, amusement parks and carousels were on the decline. During WWII, these mechanized marvels were being scrapped for the war effort. By the



Fig. 44 Indy Children’s Museum
Carousel Giraffe (Children’s)

1960s, of the nearly 3000 carousels built in the United States, only 200 were still operational.

As a child, one of my favorite experiences was holding on tightly to a colorful bejeweled wooden lion or giraffe, as I spun around and went up and down aboard the carousel at the Indianapolis Children’s Museum. I could imagine that I was worlds away on a wonderful adventure with these magical creatures (see fig. 44). From the 1980s to the present day, the childhood nostalgia, joys, and

aesthetic beauty of carousels have seen a revival. Over 40 new carousels have been created in the U.S. in the last 20 years with designs ranging from endangered species, horses/cowboys, insects, baseball, aquatic animals, to African wildlife. Local businesses and zoos noted that increased traffic and revenues have occurred with the installation of a carousel, but more remarkably is the community ownership and sense of pride that these magical rides bring to the place (The Carousel Works).

This unique form of placemaking also gained a toehold with Albuquerque’s

Parks Department in the early 1980s. They commissioned a master plan for a new 28-acre Phil Chacon Park. A key component in the design was a main plaza to accommodate a new carousel. Trees were planted and sports fields and trails were constructed, but due to budget constraints, the carousel was deleted from the design. Some residents and community leaders still feel that a great opportunity to celebrate regional art was lost when this carousel was not built. Carousels at the Lincoln Park Zoo and in Broome County New York were briefly assessed for materials, costs, spatial requirements, and their impact on the community.



Fig. 45 Carousel Components (The Carousel Works; Children's Creativity Carousel; and MeM Taw)

Lincoln Park Zoo Carousel--Chicago, IL

The Lincoln Park Zoo carousel was one of the first Endangered Species Carousels. Children scramble to climb aboard a menagerie made up of elephants, cheetahs, polar bears, pandas, gorillas, etc. "A Truly Wild Ride!" Located at the

zoo's eastern entry gate it acts as a landmark providing visual orientation and a gathering place for visitors. It is also one of the only carousels ever constructed on top of a building (see fig. 45) (Brown; The Carousel Works; and Zoo). One of the leading guidelines for the zoo that helped in the creation of the carousel is as follows: "Almost every education expert will tell you that children, particularly those who are pre-school age, learn more easily when teaching is combined with fun activities," said Lincoln Park Zoo Vice President of Education Dr. Robert Davis (Meaningful Experiences Boost Animal Education).

- General Data: Opened to the public April 20, 2001.
New carousel created by Carousel Works.
Features 48 artisan-crafted wooden animals and two chariots which can accommodate up to 50 riders.
Tickets are \$2.75
Carousel housed under a tensile shade structure.
Assisting \$1 million grant from the Ameritech Foundation.
Construction Cost-\$700,000
Size-52' dia. and 30,000 lbs.
\$400,000 in yearly revenues with 150,000 users

The Triple Cities-Carousel's--Upstate, NY (Broome County)

In the 1920s, George F. Johnson (leading shoe manufacturer & philanthropist) donated six magnificent carousels to the local parks. Mr. Johnson believed that no child should miss out on the magical ride of a carousel, so he had a caveat added to his gift that all rides would always be free. Starting in the late 1960s, Broome County and the Tri-Cities of Binghamton, Johnson City, Endicott, and Endwell began to reevaluate the potential for developing of unique cultural trail (Carousel's, Greater; Carousel's of The Triple; The Carousel Works).

- General Data: GW Johnson Park, Carousel, Endicott, NY, installed in 1934 and historically restored in 1994, Features 36 horses, 3-abreast, and 2 chariots in its original carousel pavilion which can accommodate up to 47 riders. Restored carousel created by the Herschell-Spillman Co. All rides are free A glass enclosure was added in 1999
- General Data C.F.J. Boulevard, Johnson City, NY, installed in 1923. Renovated in 2009-2010. Largest of the six county carousels, consisting of 72 figures, 4-abreast, with detailed carvings to accommodate 88 riders. Delicate landscape paintings complete the visual experience. Restored carousel created by the Herschell-Spillman Co. All rides are free Housed in a pagoda-style structure inside the Endicott-Johnson shoe factory.
- General Data West Endicott Park Carousel, Endicott, NY, installed in 1929. Features 36 animals, 3-abreast, including a pig and a dog, which can accommodate 39 riders. Restored carousel created by the Herschell-Spillman Co. All rides are free Housed in a simple wooden park shelter.

- General Data Ross Park Carousel, Binghamton, NY, installed in 1920.

Features 60 jumping horses, 4-abreast, and 2 chariots (one with monkeys) which can accommodate 72 riders.

Operational-original 51-key Wurlitzer Military Band Organ.

Restored carousel created by the Herschell-Spillman Co.

Ticket fee: one piece of litter.

Housed in a 16-sided wooden pavilion with a cupola.

- General Data Recreation Park, Binghamton, NY, installed in 1925,

Features 60 jumping horses, 4-abreast; chariots which can accommodate 39 riders.

Restored carousel created by the Herschell-Spillman Co.

All rides are free

Operational-original 2-roll frame Wurlitzer Military Band Organ with bells.

Housed in the restored original cupola.

- General Data Highland Park, Endwell, NY, installed in 1925,

Relocated from old En-Joie Park in Endicott.

Features 36 animals, 3-abreast, including a pig and a dog which can accommodate 39 riders.

Restored carousel created by the Herschell-Spillman Co.

All rides are free

Today, after 40 years of hard work, Broome County hosts the greatest concentration of operational antique carousels with 300 hand-carved movable animals called "jumpers." Listed on the thematic National Register of Historic Places, these amusement rides bring a great sense of community pride and offer an extremely

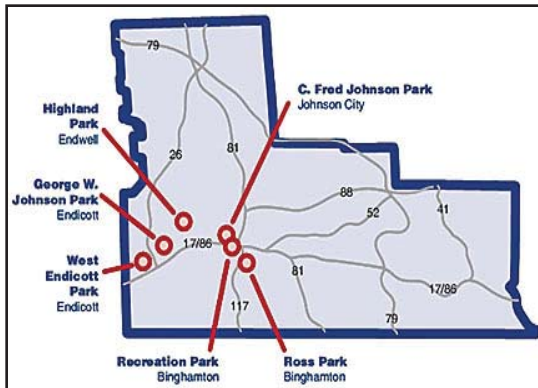


Fig. 46 Broome County, NY Carousel Circuit (Saddle)

marketable/attractive tourist destination. With the marketing campaign “Ride the Carousel Circuit,” visitors from all over the world are enticed to ride all six carousels, bringing income to the region devastated by the loss of major industries over the last 30 years (see fig 46). Painsstaking work to restore and save these carousels have

greatly enhanced the community’s sense of identity, created an iconoclastic symbol of rebirth, and a nostalgic landmark that is interactive and pure fun.

The only drawback I found in my research was the lack of aesthetics and caged-in qualities of some of the structures housing the carousels. I would recommend that Broome County look into hiring the architectural firm of SHoP/Sharples Holden Pasquarelli who design the enchanting glass and wood carousel housing for Mitchell Park in Greenport Village on Long Island (see figs. 47 & 48).



Fig. 47 Recreational Park Carousel (Travis)



Fig. 48 Mitchell Park in Greenport Village on Long Island (Chaban)

Additional useful information on carousels was obtained by telephone interviews.

Interviews: Jennifer Brown, Guest Services Coordinator Lincoln Park Zoo

Jerry Reinhardt, Director of CW Parker Carousel Museum

The following list are general specifications standards for carousels:

- Size: 40'-100" diameter
- Weight: 10-40,000 lbs.
- Turning Speeds: 2.5-5 RPMs
- Safety Pad: 10-20'
- Secure shelter it is essential for protection of the carousel & safety for the riders.
- Operational controls located in the center of the carousel and are divided into four zones: power, gears, controls, and music.
- It is essential to have a level pad to spread the weight load of the carousel evenly
- Safety: clear carousel rules must be posted, and an operational warning bell system must be installed.
- The rotational movement of a carousel creates its own micro-climate, acting as a fan to create a draft cooling the surrounding area.

Environmental corridor systems

With today's ever-growing human inflicted strain on the environment, cities must move toward creating a greener network of suitability. A growing movement/trend in landscape architectural practices and environmental agencies are creating or restoring of environmental corridors. While helping to educate society and play a role in the health of the community through greater recreational experiences, these areas can provide the planet greener systems/lungs to protect our air and water, an avenue for wildlife movement, and a habitat buffer between nature and mankind. Traditional land-use patterns in the U.S. have created a fragmented

environment that has become overwhelming and disorienting to the average urban dweller. Implementing environmental corridors can allow a city to weave together open space, parks, natural areas, fringe areas, neglected waterways, and repurpose vacant or under-utilized properties to create comprehensive patterns/networks as well as a stronger and healthier ecosystem. To gain a clear picture of these environmental pieces, the US Department of Agriculture (USDA) handbook has designated five different types of corridors (Environmental Corridors).

1. Environmental corridors are undisturbed natural areas.
2. Remnant corridors are strips of land left behind after development.
3. Introduced corridors are vegetational strips planted for conservation purposes.
4. Disturbance corridors are disturbed strip of land along transportation routes.
5. Regenerated corridors result when native regrowth occurs. Due to the proliferation of non-natives/invasive species, habitat management must occur.

Almost 100 years before the environmental & sustainability movements and these USDA handbook definitions, Frederick Law Olmsted was creating environmental corridors by means of a linked chain of parkways and public parks. Olmsted's most extensive commission of this corridors system occurred in an area called the Back Bay Fens for the city of Boston. The entire system eventually became known as the Emerald Necklace and served as a model for park systems in other cities, most notably Louisville, Kentucky.

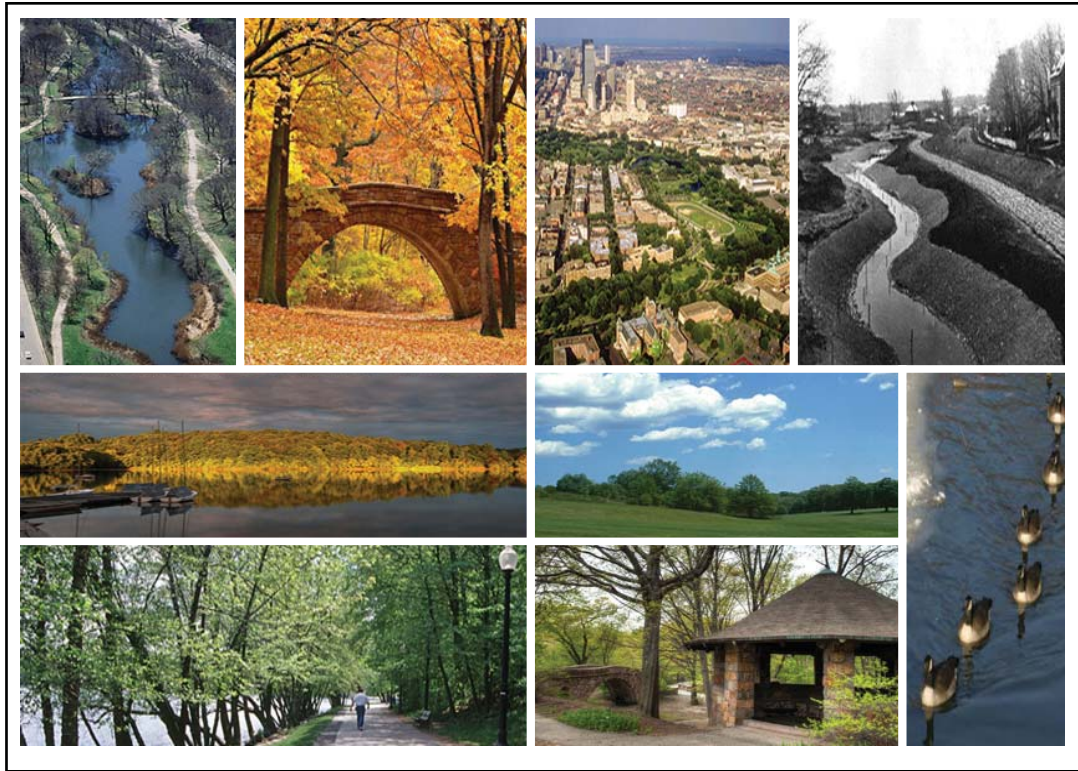


Fig. 49 Boston's and Brookline's Emerald Necklace
(Emerald Necklace; Park Overview; MacLean; and Shattuck)

Emerald Necklace--Boston and Brookline, MA

The Emerald Necklace is a 135-year-old parks and parkway system is considered the heart of Boston and Brookline with its natural core, opportunities for recreation, and social events. This 1,100-acre environmental corridor system is comprised of the Boston Common, Public Garden, Commonwealth Avenue Mall, Back Bay Fens, Olmsted Park, the Riverway, Jamaica Pond, the Arnold Arboretum, the Arborway, and West Roxbury Park (later named Franklin Park). Initially commissioned as sanitary improvements for the Back Bay and the Muddy River, the intent was to clean up noxious mudflats and to create a stabilized tidal gateway. Today, within this inter-connective park system one can experience sunny meadows, shady parkways, waterways/ponds, forests, playgrounds, recreational activities (sailing, hiking, biking, golf, cricket pitch, softball, etc.), Arnold Arboretum, golf, and the Franklin Park Zoo. Planting designs approach consists of soft pastoral masses with highlights of color

accents (see fig. 49) (Emerald Necklace; Park Overview; MacLean; and Shattuck).

- General Data: Created from 1878 to 1895.
Designers Frederick Law Olmsted, Sr., Charles Eliot, John
Charles Olmsted , & Frederick Law Olmsted, Jr.
1 million visitors each year
More than 300,000 people live within its watershed area.
- Mission: Protect the watershed system while creating a green corridor for
wildlife, plants, recreation, and cultural heritage.
- Strengths: In 1996, the Emerald Necklace Conservancy, a public-private
partnership, was created to protect, restore, and promote the park system.
 - Well-organized programs, funding, and youth program.
 - Well-thought out circulation patterns of parkways, paths, and waterways.
 - Circle The City Program: Open Streets, Open Parks semiannual event
where car-free corridors are created for festivals and community interaction.
 - Urban wild-environmental systems and habitat-driven connectivity.
 - Organized volunteers provide over 20,000 hours annually
- Weaknesses: Conflicts between active vs passive recreational uses and wildlife.
 - Crime issues due to its location in the 5th largest combined cities in the U.S.
 - Overuse, or the “love the park to death” syndrome.
- Assessment: This case study amplifies the twofold benefits of protecting
watershed basins and linking greenway networks for wildlife habitats and human
recreation. With even greater constraints on municipal budgets, the creative
public-private partnership managed by the Emerald Necklace Conservancy is
an additional model worth exploring for the BioPark.

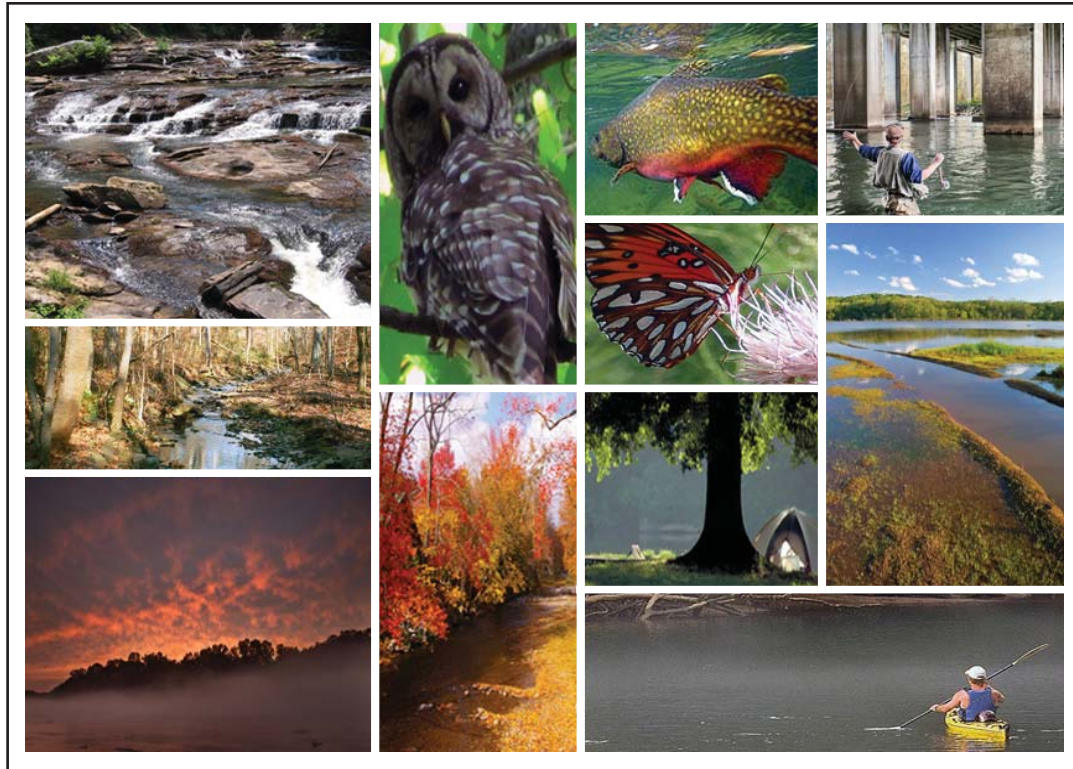


Fig. 50 Atlanta's Chattahoochee River, GA
(Atlanta Tourist; Chattahoochee River; Chattahoochee Watershed; and Tri-State)

Atlanta's Chattahoochee River, GA

The Chattahoochee River runs 430 miles across three states and through the major metropolitan city of Atlanta, GA with a population of 5.48 million in 2012. The Chattahoochee, Flint, and Apalachicola Rivers together make up the Apalachicola–Chattahoochee–Flint River Basin (ACF River Basin). This watershed's flora is comprised of mesic hardwoods and emergent/scrub-shrub wetlands linked biologically to the Appalachian Mountains. A high level of biodiversity of over 950 species of plants alone adds richness and variety to the natural setting. In the 1970s, a group of Atlantans realized a need to preserve and protect the Chattahoochee River running on the northwest side of town. In 1978, President Jimmy Carter and Congress created the Chattahoochee River National Recreation Area (CRNRA) forever protecting its biodiversity, and geological significance.

Clear, cold, and slow-moving, the river sometimes plunges as a muddy torrent through its rockbound shoals (see fig. 50) (Atlanta Tourist, Chattahoochee River, Chattahoochee Watershed, and Tri-State).

- General Data: National Recreation Area in the NPS contains 16 park units along 50 miles of river. (Over 10,000-Acre corridor)
2,000 miles of trails on land and water.
Experiences of rock outcrops, waterways, lakes, trout hatchery, boat launches, ferry crossings, woodlands, playgrounds, trails, mills, picnicking, recreational activities (hiking, biking, horseback riding, boating, rafting, fishing, etc.)
Over 197 archeological sites.
Facilities/structures include: Chattahoochee River Environmental Education Center (CREEC), Island Ford Park Headquarters, Chattahoochee Nature Center, Hyde Farm (Historic rural setting 1920s), and historic bridges.
3 million visitors in 2010 spending \$89,784,000 to support
Creates 1,160 jobs in the local economy.
\$3 entry fee (opened dawn to dark)
- Mission: Protect Atlanta's primary drinking water supply while creating a green corridor for wildlife, plants, recreation, and cultural heritage.
- Strengths: In 1995, The Trust for Public Land (TPL) along with other conservationists (Chattahoochee Riverkeepers, Trout Unlimited, etc.) created a non-profit organization to protect, restore, and promote the park system. A long-term goal is to establish a green corridor extending from the north Georgia Mountains around Helen south to Columbus.

- Over 2 million children have enrolled in their Junior Ranger Program.
- Weaknesses: Conflicts between active vs passive recreational uses and wildlife.
 - Crime issues due to its location in the 40th largest city in the U.S..
 - Overuse, or the “love the park to death” syndrome.

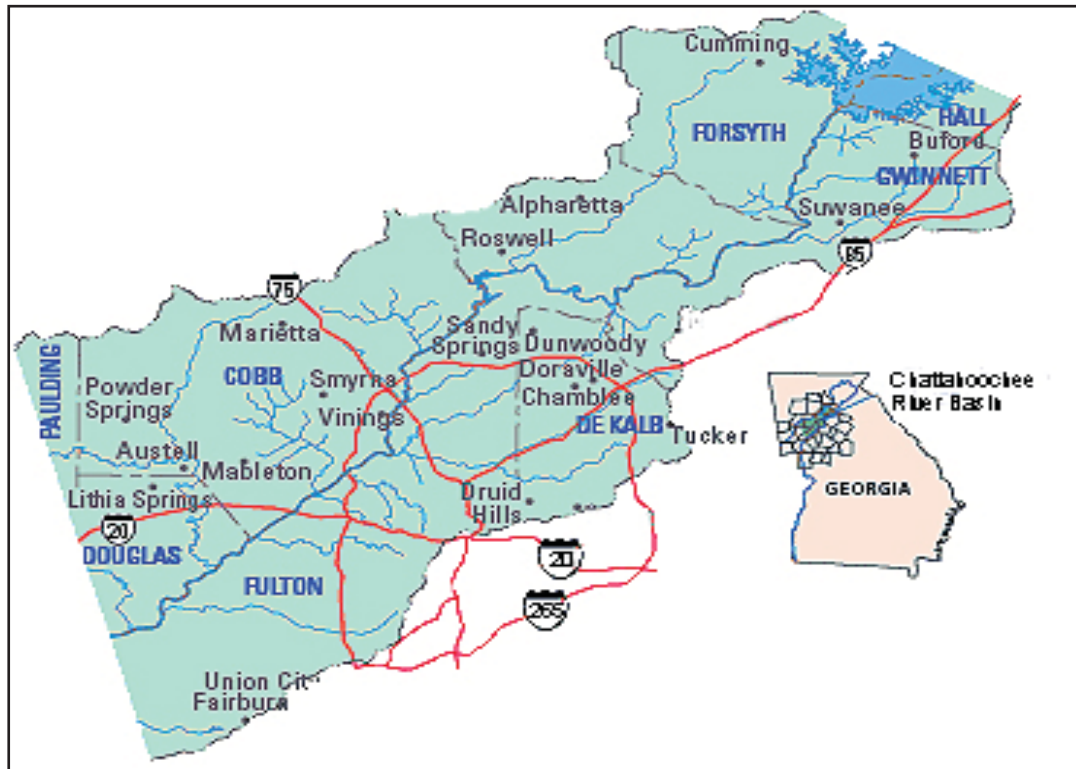


Fig. 51 Chattahoochee Watershed (Chattahoochee)

- Flooding and water safety issues (see fig. 51).
- Water Wars-for over 20 years, Georgia, Alabama, and Florida have fought over the future allocation of water resources of two major river basins. Georgia wants to allow Atlanta to continue to grow, while Alabama and Florida want enough downstream water flowing to protect their physical and economic well-being.
- Assessment: The key design patterns of interest from this case study are protecting watershed basins integrated with a greenway network for wildlife,

habitats, and human recreation. Also, the beneficial development of non-profit conservancy groups teaming up with the management of the NPS merits investigation as a model for the BioPark.

Architecture alternatives

Over the last 20 years, a new philosophy in construction has emerged in the U.S. For philosophical and financial reasons, architects and builders have discovered the idea that smaller can be better. In the spirit of philosopher-naturalist Henry David Thoreau's cabin at Walden Pond, small mobile energy-efficient structures presenting possible solutions for a myriad of challenges. Environmental constraints of a site and the desire for greener construction practices in pristine or remote off-the-grid development are pushing designers to rethink their approach to design. The desire for less infrastructure, limited construction budgets, limited maintenance budgets, need for greener and more local materials, and flexibility in dealing with ever-changing environmental and social conditions have generated a new wave of creativity.

Award-winning architectural firms such as SHoP/Sharples Holden Pasquarelli, Three Rivers EcoBuilders, and grassroots designers such as Jay Shafer are changing both the scale and construction materials traditionally used in the U.S. construction industry. Alternatives in materials can vary from high-end technological LEED-certified, rammed earth, strawbale, cob, traditional adobe, and recycled site demolition to construct the "new" 21st Century architecture.

In Europe, firms such as Jägnefält Milton are developing even more creative and novel solutions, turning preexisting abandoned rail tracks scattered across the countryside of Norway into opportunities for exquisitely beautiful tiny mobile structures used to house seasonal tourists and recreational sportsman. (see figs. 52 & 53) (Rolling Masterplan).



Fig. 52 Recreational mobile structures in Norway (Rolling Masterplan)



Fig. 53 Tourist mobile structures in Norway (Rolling Masterplan)

The city of Albuquerque and the BioPark have expressed a desire for more environmentally sensitive public amenities. This creative project has the opportunity to highlight architectural alternatives for low-impact development along the Rio Grande River corridor that will act as demonstration projects for its citizens. Institutions such as the National Park Service's Assateague Island National Seashore and Phoenix Zoo are already allowing their very public facilities to become a showcase for these architectural alternatives. (More alternative construction techniques will be covered in chapter 6)

Assateague Island National Seashore, MD, VA

Assateague Island is a 37-mile long barrier island located off the eastern coast of Maryland and Virginia. The island is owned and operated by three different governmental agencies: the National Park Service, Maryland State Parks, and United States Fish and Wildlife Service. The land and water boundaries of Assateague Island total over 48,000-acres of salt marshes and many beaches. The most notable fauna on the island are the more than 300 wild ponies.

- General Data: Since 2002, the park has developed a unique strategy.

Facilities management has chosen to modify how they

address the design of structures and hardscape. Adaptable mobile amenities now help in coping with the changing landscape along the seashore, where tides roll in and out, strong winds blow around dunes, and beaches erode.

These architectural alternatives are as follows.

- Cabana/changing rooms with three shower stalls and restrooms are extremely easy to move and green by utilizing sustainable materials, solar, and low water flow shower heads (see fig. 54).



Fig. 54 Showers, Assateague Island National.
(NPS-Northeast)

- Parking lots are constructed of a clay base and clam shell surface for extreme flexibility. Before the changing beach front allows the sea to inundate the parking lot, construction crews can easily recycle this material by scooping it up and laying down a new parking lot further inland or down the coast.



Fig. 55 Boardwalks, Assateague Island National
(NPS-Northeast)

- Boardwalks are made of composite lumber in molecular units that can be easily moved to new locations as sand dune migrate or human impacts on habitats require adjustments(see fig. 55).

- 14 & 22 KW photovoltaic solar arrays generate electricity for the ranger station, campground office, and concession stands, and pump well water to showers (see fig. 56).



Fig. 56 Solar Rays, Assateague Island National (NPS-Northeast)

These portable structures and the green parks plan for park operations and management have reduced water & energy consumption, stabilized maintenance demands, allowed changing design flexibility, and placed the NPS on the forefront of sustainability producing “Climate-Friendly Parks” (NPS, Life on the Edge).

Phoenix Zoo, AZ

The Phoenix Zoo is 125-acres of one the most successful, privately-owned, nonprofit zoological parks in the nation with approximately 1,200 animals on exhibit including mammals, fish, invertebrates, birds, and reptiles. The zoo has selected to use alternative construction techniques such as rammed earth and

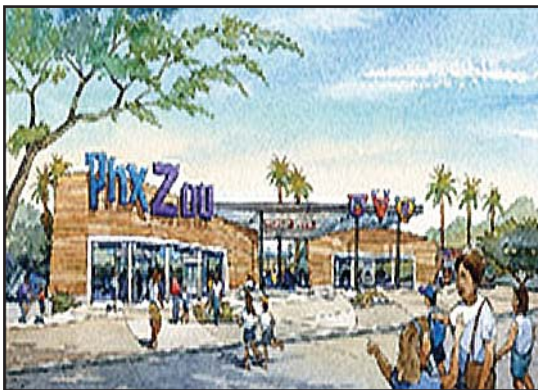


Fig. 57 New Entry for Phoenix Zoo (New Entry)



Fig. 58 Alternative Gabion Construction at the Phoenix Zoo (Alternative Gabion)

gabion basket walls to allow for a greener campus design (see figs. 57 & 58).

- General Data: Opened in 1962.

Amenities include: three children's playgrounds, climbing wall, paddle boats, endangered species carousel, camel rides, safari train, petting zoo, restaurants, restrooms, and gift shops.

- Mission: "experiences that inspire people and motivate them to care for the natural world" (Learn).
- Vision: "improving people's lives through interaction with nature, excelling in conservation, education, exhibition and recreation" (Learn).

Public spaces

Within an ever-increasingly urban society in the U.S., greater demands are being placed upon parks, plazas, streetscapes, and esplanades for nature/green relief and social interaction. Well-designed public spaces can facilitate an increased sense of community identity, individual well-being, and belonging for urban dwellers. In his book *Great Streets*, Alan Jacobs writes that the best streets/public spaces allow all kinds of people to interact regardless of class, color, or age differences. The most desirable outdoor public places are those that allow a community to work, play, live, spend time, and "be," while at the same time contributing greatly to the economy of the city. Jacobs writes:

We are attracted to the best of them not because we have to go there but because we want to be there. The best are as joyful as they are utilitarian. They are entertaining and they are open to all. They permit anonymity at the same time as individual recognition. They are symbols of the community

and of its history; they represent a public memory. (11)

Over the last 10 years, the cities of Indianapolis and New York City have developed new public spaces that creatively approach urban living. Indianapolis' Cultural Corridor and New York City's High Line are making positive contributions to residents' cultural and economic well-being while at the same time becoming "must-see" tourist destinations (see fig. 59). No longer can designers just add green grass, benches, and trees and expect to draw people outdoors for a respite from the fast-paced technological existence of the 21st century.

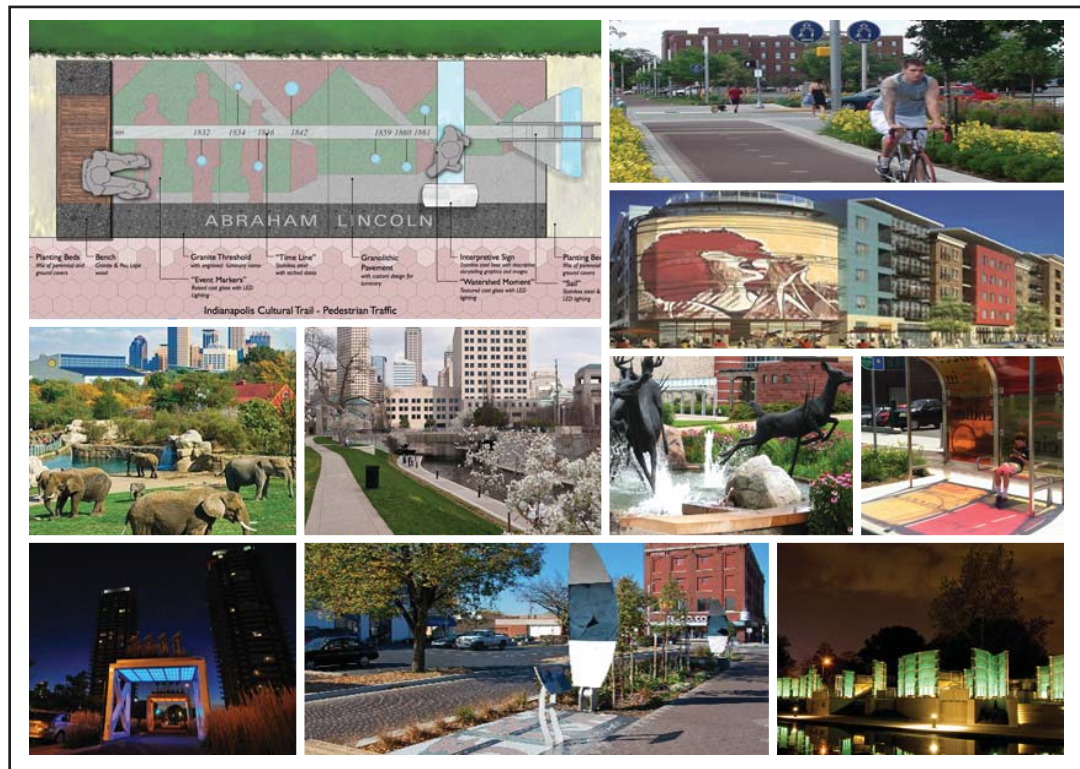


Fig. 59 Indianapolis Cultural Corridor (Indianapolis)

Cultural Corridor--Indianapolis, IN

The Indianapolis Cultural Corridor is an 8 mile urban trail system for community interaction and contemporary public art, linking together downtown Indianapolis to Indiana University-Purdue University Indianapolis (IUPUI), the Wholesale District,

White River State Park & Canal, Fountain Square, the Mass. Avenue District, American Legion Mall, and the Indianapolis convention Center. This aesthetic network of paths unites the downtown's four cultural districts (The Canal & White River State Park, Fountain Square, Indiana Avenue, Mass Ave,

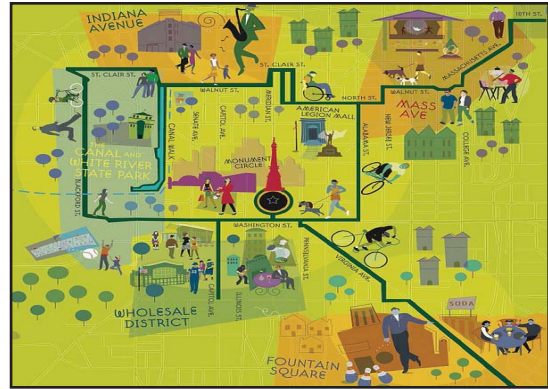


Fig. 60 Indianapolis Cultural Trail and Districts (Indianapolis)

and the Wholesale District.) into a cohesive unit designed for the pedestrian and intermodal transportation. The project encompassed a wide range of design issues (Streetscape, public art, greenway, recreational corridor, and sustainability) that will also need to be addressed in the redesign of the BioPark (see fig. 59 & 60) (Arden, Glick, Trails, and Indianapolis).

- General Data: Official grand opening May 11, 2013.

Central Indiana Community Foundation (C.I.C.F.): non-profit organization that raised funding & hired consultants.

Rundell Ernstberger Associates: landscape architecture firm lead consultant.

\$63 million, six phased project with an additional project component of the Glick Peace Walk.

Budget includes \$6 million maintenance endowment, \$2 million or public art, and \$20 million in infrastructure improvement to the city.

- Strengths: Project activated by demonstration phase project in 2008. Component phasing of the site design used to build public consensus, enlarge project scope, and raise funding.

- Well organized nonprofit organization working with the city of Indianapolis to improve infrastructure and quality of life for its residents.
 - Foundation to counterbalance the numerous war memorials throughout the city. Honored Peace Makers: Susan B. Anthony, Andrew Carnegie, Thomas Edison, Albert Einstein, Benjamin Franklin, Abraham Lincoln, Martin Luther King, Jr., Franklin D. and Eleanor Roosevelt, Jonas Salk, Mark Twain, Booker T. Washington, and the Wright Brothers.
 - Substantial budget funding for continuing maintenance of the trail.
 - Bio-swale planters organize parking along city streets also bring an environmentally green solution to help with Indianapolis' pollution/water quality difficulties of a combined sewer and stormwater infrastructure.
 - Popular destination for residents and visitors
- Weaknesses: Budget constraints have limited some design aspects of the trail, although many feel that this is just the beginning.
 - Assessment: The key design patterns pulled from this case study are well structured organization of pedestrian and cyclist circulation (multi-modal trail) and the great consideration given to phasing and future maintenance needs of the project.



Fig. 61 The High Line, NYC (High Line)

The High Line--New York City, NY

The High Line is an historic (30' high) elevated railway structure adapted into an urban park and promenade it is located on Manhattan's West Side. It runs from Gansevoort Street in the Meatpacking District to 34th Street (see fig. 61) (High Line, High Line History. Friends, and The High Line. NYC).

- General Data: 1999 Community residents, form Friends of the High Line preservation and transformation the historic elevated freight railway structure.
2002 NCY Mayor Micheal Bloomberg saves from demolition.
2004 Design Competition
Opened June 9, 2009-Phase one of three phases.
Design Team: Field Operations(James Corner), Diller

Scofidio, & Renfro.

Construction Team: LiRO/Daniel Frankfurt & Siteworks
thing are portable.

Naturalized plantings (210 species) inspired by the self-seeded landscape already on the tracks. (Piet Oudolf)

Park includes observation areas, cafés, theater, & public art.

Nine controlled (7 am-10 pm) access points with ADA.

- Strengths: Once considered an eyesore, this abandoned transit corridor turned naturalized/wildlife habitat was re-envisioned into an economically successful public space, and created a paradigm shift in ideas about urban land use and parks.
 - Dynamic: the Friends of the High Line (non-profit conservancy) worked with the NYC Department of Parks & Recreation to promote, maintain, operate, and public programming this extraordinary public space.
 - Overwhelming support from the New York City Planning Commission: votes to approve a zoning variance allowing for phase 3 of this project to occur.
- Weaknesses: Gentrification of surrounding area is causing displacement of existing neighborhood residents and businesses.
- Assessment: The key design patterns pulled from this case study are “creative visionary” adaptive reuse design coupled with private-public cooperation to create contextual historical detailing of site design/furnishings.

Public art program

The city of Albuquerque already has a very successful public art program (see ch. 2), but the one thing it is missing is the component of community interaction with the artists themselves. The addition of an artist-in-residence program would add greater opportunity for the support of local artists and art education in the city of Albuquerque and throughout the Southwest. Inviting an artist(s) or creative person(s) to a new environment and providing some financial support can allow time for reflection, research, lecturing, educate/training, networking, workshops, collaborations, and production of art pieces. This immersive layer added to an existing public art program can also contribute to the community through the support of its museums, universities, galleries, studio spaces, theaters, businesses, governmental offices, and even festivals. Hundreds of such artist-in-residence programs already exist throughout the world. In fact, this is not a new concept



Fig. 62 Torpedo Factory Art Center (Torpedo)

for it harks back to the Arts and Crafts movement of the late 19th and early 20th centuries. There is no single model, but the Torpedo Factory Art Center in Alexandria, VA is a well-established case study to investigate.

Torpedo Factory Art Center--Alexandria, VA

Adaptive reuse and restoration of an abandoned Naval weapons production building into an artist colony/co-op situated along the riverfront of the Potomac in Alexandria, Virginia (see fig. 62). In 1974, City personnel along with artist volunteers

bulldozed and cleaned with firehoses 55 years of neglect. On September 15, 1974, opened to the public. Organizational makeup of this cooperative venture consists of 160 artists, 1,000 gallery members, 2,000 art students, and the governing non-profit Torpedo Factory Art Center Board (TFACB).

- General Data: Located on Alexandria's Potomac River waterfront.
Readapted 1918 U.S. Naval Torpedo Station Building.
Saved from demolition in the 1960's.
Joint venture with city of Alexandria and non-profit (TFACB)
First center director and visionary-Marian Van Landingham.
Center houses more than 165 visual artists studios (82 visiting artists), 6 galleries, 2 workshops, rental spaces, cafe, Art League classrooms, book store & gift shop, businesses, and the Alexandria Archaeology Museum.
Artist venues/studios for painting, ceramics, photography, jewelry, stained glass, fiber, printmaking, and sculpture.
500,000 visitors annually from all over the world.
Visitors can participate with an artist in their studio to observe, ask questions, learn, and purchase original artwork.
- Mission: "The Torpedo Factory Art Center's mission is to enhance public art appreciation and education by providing the opportunity to visit working art studios and artist cooperatives, and to take classes" (Torpedo).

This phase of the study examined 11 highly varied case studies. These are very accessible public spaces/amenities that have brought to their communities economic revitalization, identity, pride, and created destinations for visitors. As discussed in

Chapter 2, theories of placemaking go hand-in-hand with the creation of community identity and cultural/social landmarks to create a landscape that is valued by both public agencies and the general population.

The following positive re-occurring design patterns were gleaned from these case studies:

1. In today's economic market, if a major community enhancement project/program is to be successful it needs to be a joint venture between public governmental agencies, private business community, and no-profit organizations.
2. Establishing a non-profit organization to encompass management, fund-raising, and marketing is essential for the longevity and care of a project in partnership with governmental agencies.
3. Inter-connectivity through a well thought out circulation system is clearly an asset for uniting the pieces of a fragmented urban fabric.
4. Multiple modes of transportation are necessary for both recreational and greater sustainable practices of a city.
5. Celebrating and embracing the uniqueness/spirit of the place adds greatly to the design of a project.
6. Environmental sensitivity/considerations need to be intertwined with the needs of the human users of the public space to create a healthier community and increase sustainability of a city.
7. Art is beautiful, fun, energizes a space, and celebrates the uniqueness of the place.

These seven models from the case studies research helped establish guidelines for guidelines for redesigning BioPark and adjacent amenities and demonstrated the feasibility of this creative project.

Chapter 4 Inventory and Site Analysis

Good design occurs when the designer searches for greater understanding of the site through its multiple layers of complexity. Gathering these layers is called the inventory phase of a project. Before the design process, I addressed the following layers or overlays in an effort to derive the best strategies for redesigning the BioPark and adjacent amenities.

Inventory layers:

- Social context/multi-cultural heritage
- Environmental context/biological systems
- Stakeholders and users (clients) of the site
- Surrounding context of the site
- Related case study reviews
- Clients' future needs/aspirations
- Existing site conditions
- Physical opportunities and constraints of the site
- Connections to existing natural and/or cultural assets

In this chapter, I continued to develop my understanding of the site. I also reviewed these inventory layers to discern a more site-specific approach for analyzing of these layers. After the analysis phase, I was be able to generate design programming and design concepts.

- The City of Albuquerque's "Vision Statement" will inform my design:

“Albuquerque is a thriving high desert community of distinctive cultures coming together to create a sustainable future” (City of Albuquerque).

Demographics

The following demographics were gathered from the 2012 U.S. Census Bureau, university databases, City of Albuquerque website, and interviews.

U.S. Census 2012

Category	Albuquerque	New Mexico	National
Population	545,852	2,059,179	311,173,000
Married (15 yrs. and older)	50.4%	55.0%	57.7%
Race (White)	71.6%	59.4%	82.8%
Race (African American)	3.1%	1.2%	8.4%
Race (Asian)	2.1%	0.6%	1.9%
Completed Bachelors Degree	31.8%	17.3%	22.8%
Crime Index (per. 100,000)	5,831	3,913	3,139
Air Quality Index	50	38	37
Income Per Capita	\$25,819	\$19,298	\$25,804
Median Household Income	\$46,662	\$40,729	\$52,328
Median Home Value	\$188,600	\$129,005	\$200,419
Median Rent	\$712	\$577	\$801
Avg. One-Way Commute	23 mins	24 mins	26 mins

I was not able to find consistent demographics on Hispanic/Latino population in Albuquerque. Numbers range from 23.2% to 46.7%, perhaps because the city of Albuquerque proper has major areas within its boundaries that are unincorporated. Population figures from the metropolitan area (901,700--57th largest) verify the 46.7% Hispanic/Latino number. Quick assessment of these numbers reveals

that Albuquerque has the highest percentage of population in the state, a higher percentage of residents with a bachelor's degree compared to the nation, a higher rate of crime compared to the nation, a higher rate of air quality/pollution issues compared to both state and the nation, and a higher rate of income compared to the state. Additional statistical information shows that the city has a fairly balanced ratio in gender population. All other statistics from this factfinder and U.S. Census chart seem to fall within a comparable range.

The BioPark is situated between two of these unincorporated areas with a very high percentage of Hispanic residents: the North Valley and the South Valley. Interestingly, another demographic factor that may play into the BioPark redesign is that 53% of the city's residents are not native Albuquerqueans. The building of community identity and sense of

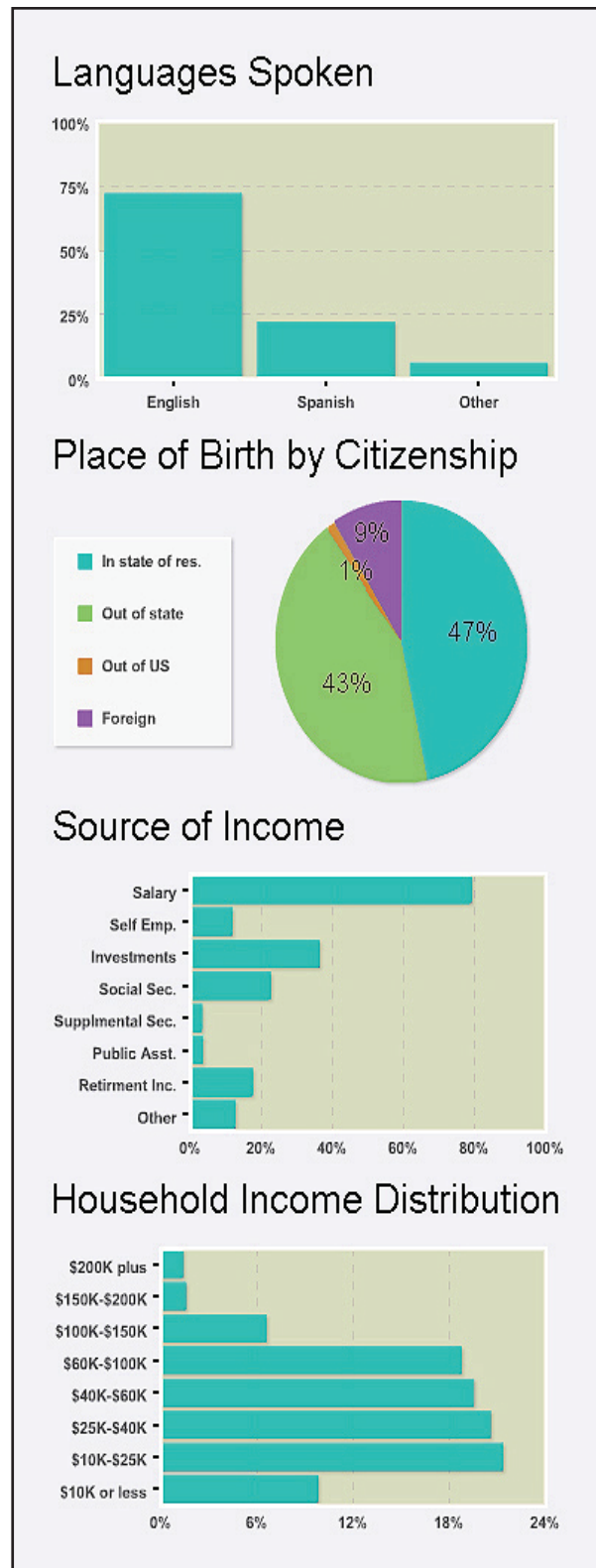


Fig. 63 Albuquerque Census 2012 Charts (Community Facts)

place is one of the key design objectives in this creative project. To visually clarify and compare these numbers, I have created four charts with the help of an online database (see fig. 63) (Community Facts).

New Mexico's Native Americans:

- 19 Pueblos: Acoma, Cochiti, Isleta, Jemez, Laguna, Nambe, Ohkay Owingeh, Picuris, Pojoaque, Sandia, San Felipe, San Ildefonso, Santa Ana, Santa Clara, Santo Domingo, Taos, Tesuque, Zia, and Zuni.
- 3 Nations: Jicarilla Apache Nation, Mescalero Apache Reservation, and Navajo Nation.

General Characteristics of Albuquerque

- City 181.3 sq. mi
- Density 3,010.7/sq. mi
- Land 180.6 sq. mi
- Water 0.6 sq. mi
- Elevation 2,842' to 13,161' above sea level. (Sandia & Manzano Mountains)
- Mountain Central Time

Climatic Conditions

- 278 days of sunshine per year (avg.)
- Daytime highs in winter mid-40s (avg.)
- Summer daytime highs in the 90s (avg.)
- Precipitation 8–9 inches per year (avg.). Monsoon rains July-August
- March- April winds blow at 20 to 30 mph (avg.) with strong gusts that blow sand & dust. In May, the winds tend to subside, but pick up again in the Fall.

Planting Conditions:

- 7a-USDA Hardiness Zone: temperatures of 0 to 5 degrees Fahrenheit (Hardiness Zones vary with elevation).

- Growing season is almost year-round, i.e. March-November. Two growing seasons--cool and warm--vary with elevation.
- Albuquerque periodically experiences drought. The city is currently entering its third year of drought.
- Albuquerque is situated at the northernmost edge of the Chihuahuan Desert, but depending on elevation and proximity to the Rio Grande River, planting conditions vary greatly.
- Soil conditions are generally sandy and alkaline, but vary with elevation and proximity to the river.
- Spring & Summer Watering Restrictions: Time-of-Day Watering Ordinance
Annually, April 1 - October 31, No sprinkler usage from 11 am to 7 pm (Albuq.).

These numbers reveal that the BioPark's proximity and interaction with Rio Grande River is a major asset. The river can provide a respite from the high desert environment while offering opportunities for recreation, grand vistas, and engagement with nature. The BioPark should address high elevation and climatic conditions. Design parameters also should consider out-of-state visitors and those with health conditions, giving special consideration to how climatic conditions will affect their day at the BioPark.

Geography of Albuquerque:

Albuquerque is geographically located in the Southwest United States, in the middle of the state of New Mexico, in Bernalillo county (see fig. 64) (pl. 1 & 2). The city is situated within the

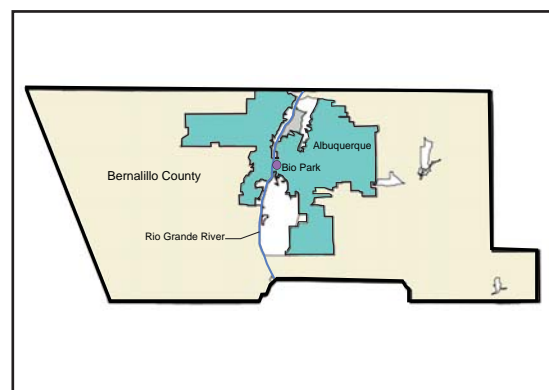


Fig. 64 Bernalillo County (Albuq.)

Rio Grande Valley basin and the so-called “Box Effect” of the Sandia & Manzano Mountains. The Rio Grande River allows the city to have an oasis in middle of the high desert, yet the scenic mountains coupled with the desert can create thermal inversions that trap pollutants over the city. This so-called box effect is wonderful for balloonists, but can be deadly for people with health and breathing problems.

According to Richard Zita, Project Manager Department of Municipal Development (DMD)/CIP of the City of Albuquerque, the city has designated 9 distinctive districts: Far Northeast Heights, Northeast Heights, Uptown,



Fig. 65 Albuquerque Districts (Albuq.)

UNM/Nob Hill, Southeast/Kirtland AFB, Old Town/Downtown, South Valley/Southwest Heights, West side, and North Valley. The South Valley and the North Valley are politically outside the city’s governmental powers. The North Valley consists of two autonomous villages: Los Ranchos and Corrales (see fig. 65) (pl. 1 & 2).

Rio Grande River:

Albuquerque’s drinking water currently comes from the Rio Grande River (diverted from the Colorado River through the San Juan-Chamas) and a receding aquifer that was once described as an “underground Lake Superior.” Water resources management strategies are being developed by the city, other governmental agencies, and other conservationist in hopes of addressing this problem. The typical annual hydrology cycle for the Rio Grande River is characterized by a low winter flow, a spring high peak in early April to mid-May due to snow melt, a low flow in June, high peaks with monsoon rains in July-August, and decreasing flow through the fall.

The Rio Grande is classified as an “exotic” river because it flows through a desert. The Albuquerque portion lies within the Rio Grande Rift Valley, bordered by a system of faults, including those that lifted up the adjacent Sandia and Manzano Mountains (Bullard). Most of the Rio Grande Watershed is under federal and quasi-federal ownership.

The University of New Mexico:

The University of New Mexico at Albuquerque (UNM) is a public research university founded in 1889. Student Population: 35,211. The main Campus is over 600-acres and less than 5 miles away from the BioPark.

Albuquerque International Sunport:

Albuquerque International Sunport is the primary airport in the state. In 2009, it handled 5,888,811 passengers. The BioPark is roughly a 15 minute drive from the airport (distance 6 miles).

BioPark Location and Site Boundaries

The BioPark is located just southeast of Old Town, approximately 2 miles from Downtown along the east side of the Rio Grande River and its three major bridges (I-40, Central Ave./Route 66, and Bridge Blvd.) The BioPark’s boundaries are as follows:

North-San Gabriel State Park Area (remnant) & I-40

East-The adjacent neighborhoods of West Old Town, Hunning Castle/Country Club, and Barelas (see fig. 66)

South-Bridge Blvd., SW

West-Rio Grande Valley State Park/Openspace (Rio Grande River and Bosque)

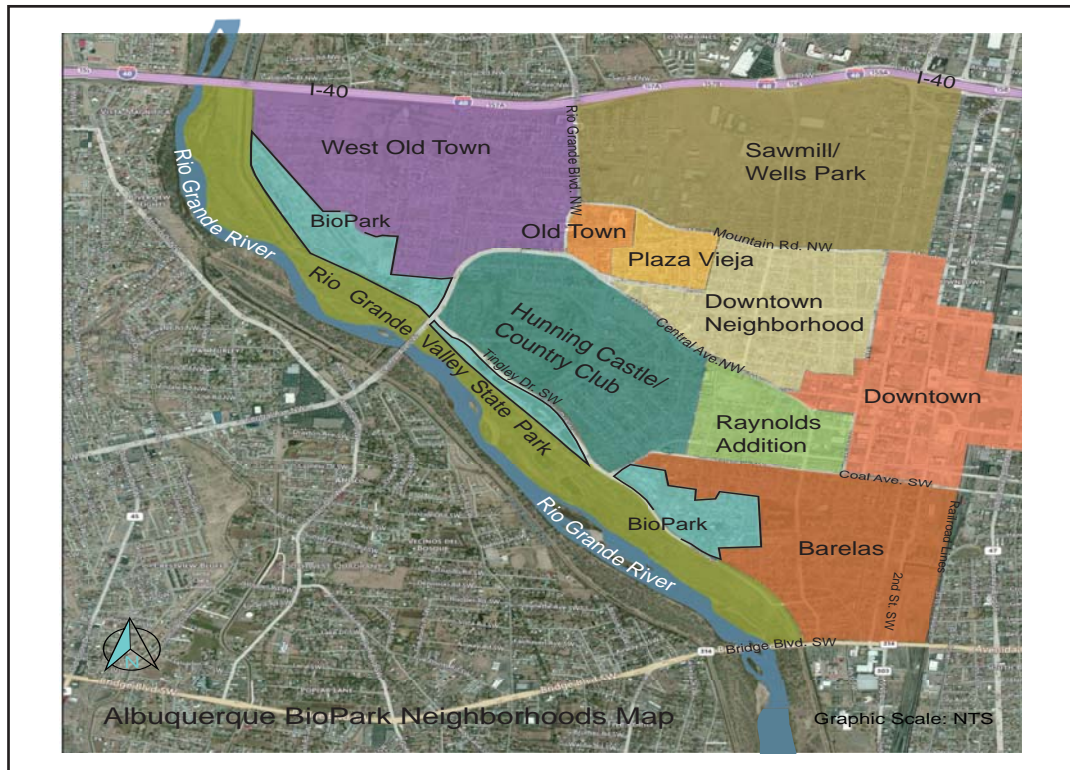


Fig. 66 Albuquerque Neighborhoods Adjacent to the BioPark Map

General Characteristics of the BioPark

Albuquerque native has three main types of vegetative cover: The upland (foothills), shrub-desert/grasslands, and Bosque/forest (river). The grasslands are of the short high desert habitat. Adjacent to the BioPark, the neighborhood of Hunning Castle/Country Club has its origins in the 1930s, when residents began to mirror landscape practices of the lush high rainfall (35'-50" inches) environments of the Eastern U.S. Theoretically, this has created a fourth vegetative cover requiring too much watering, but this artificially green landscape should be discouraged due to its environmentally destructive use of limited water resources. For the past 20 years, the city has slowly shifted landscape aesthetics/attitudes toward a more xeric palette which is sensitive to the demands of regional water consumption. For example, simply shifting from the lush high water demanding Kentucky bluegrass

(60" of rainfall year) to the native Blue Granma grass (8" per year) would greatly increase the sustainability of the cities public landscapes.

The visual characteristics around the BioPark vary widely due to the linear nature of this site, economic conditions of the neighborhoods, land use patterns, and transportation patterns. Thus I have compiled existing contextual photos (see pl. 10-17). Also, due to the linear nature of this site, I have broken down mapping of the BioPark into five areas: San Gabriel State Park (North), Biological Park (central), Country Club (central), Tingley Beach (Center), and Rio Grande Zoo (South).

Vehicular Circulation and Access to the BioPark

Vehicular circulation patterns (8 mile radius) surrounding the BioPark are as follows and listed in hierarchy of traffic volumes:

- Urban Interstate: I-40
- Urban Principal Arterial: Central Avenue, Bridge Boulevard, 2nd Street, and Coors Boulevard, Coal Avenue, Lead Avenue
- Urban Minor Arteria: Rio Grande Boulevard
- Urban Connector: Tingley Drive, Mountain Road, 2nd Street, Coal Avenue, Lead Avenue

The BioPark is centrally located and has excellent vehicular and mass-transit connectivity (see fig. 67). Case studies in chapter 3 demonstrated that streets can be more than just the means for automobiles to get around. With good design and attention to details, streets can become cultural corridors creating community identity and pride while at the same time allowing safer pedestrian and cyclist access.

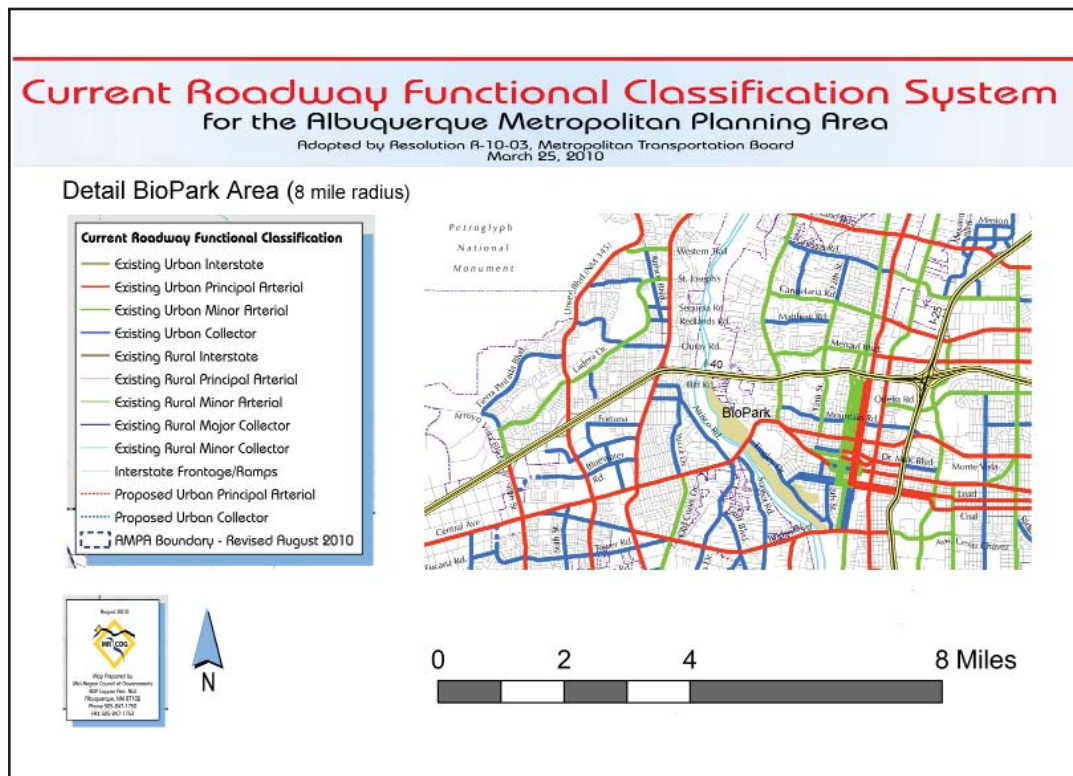


Fig. 67 Albuquerque Roadway Classification Map (Albuq.)

Through my analysis, I recommend the following:

- Designate bridges over the Rio Grande River at I-40, Central Avenue, and Bridge Blvd. as gateways/landmarks to the city and BioPark. To accomplish this, I recommend that these areas be given special attention in the designing of wayfinding techniques, aesthetic enhancement through public art and native plantings, attention to viewsheds and lighting, and restoration of the Rio Grande River and Bosque.
- Enhance businesses along Central Avenue/Route 66 (from the bridge to Old Town), restore historic buildings, remove visual clutter from the streetscape, re-purpose vacant buildings, add wayfinding signage, and create shady oases for pedestrians.
- Develop safer and greater accessibility along Tingley Drive into the BioPark

facilities, add pedestrian crossings from the adjacent neighborhoods, and enhance the ecological and visual quality of the area with native plantings.

- Develop of a connective loop linking cultural facilities, Old Town, and Downtown to the BioPark.

Note: Recommendations for existing entrances or modifications in the BioPark have addressed the five project areas: San Gabriel State Park Area, Biological Park Area, Country Club Area, Tingley Beach Area, and the Rio Grande Zoo Area.

Mass-Transit

Over the last 10 years, the city of Albuquerque has developed a mass transit system that is increasingly multi-modal in an effort to help curtail growing air quality problems. The Alvarado Transportation Center (ATC) is the central hub for ABQ Ride buses, Amtrak/Southwest Chief Line, RapidRide semi-BRT Service (Buses), Greyhound, and the New Mexico Rail Runner Express. In addition to the central transit hub located in downtown Albuquerque, the city has provided 16 Park-and-Ride facilities (see fig. 68). The city has also established programs to greater assist residents and decrease automobile traffic through programs such as carpooling, vanpooling, mini-ride for disabled and senior citizens, bike racks on ABQ Ride buses, and a bike/walk fitness setup. ABQ Ride's public transportation system offers more than 30 routes throughout the city with bus stops approximately 2 blocks apart. In 2010, an estimated 12 million passengers utilized this ADA-

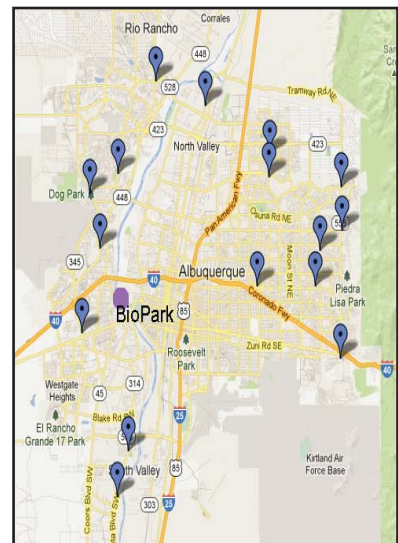


Fig. 68 Park and Ride Map (Albuq.)

accessible system (see pl. 4) (Albuq.). This transit system is well-managed and well-maintained, but still has image problems. City surveys have shown that a large portion of residents believe the bus system attracts “undesirables.” ABQ Ride and the city are continuing to address this issue, so that the buses gain class-less status and everyone feels safe to ride them.

Another problem is that existing bus routes to the BioPark are very limited. One route runs down Central Ave. adjacent to the Biological Park. The other route runs two blocks east of the Zoo. No public transportation system runs along the BioPark’s major connector, Tingley Drive SW.

Through my analysis, I recommend the following improvements to the city bus system:

- More shaded bus stop structures, if possible every 4 blocks (1/2 mile apart).
- Creatively designed bus stops that serve as landmarks and community kiosks/information centers, plus have emergency and online connectivity.
- New bus routes/loop specially designed to inter-connect all the BioPark facilities with cultural amenities, Old Town, Downtown, and University of New Mexico (UNM).
- An incentive program linked with BioPark facilities to increase ridership.

Recreation Use/Trails

In 2006, *Bicycling Magazine* rated Albuquerque the 3rd most likable city in the nation because of its over 400 miles of bike paths and trails for mountain bikers and hikers. This existing bicycle and trail system is a key to establishing a vigorous pedestrian-oriented cultural corridor connecting existing city districts to the BioPark (see pl. 5 & 6). The future 50-Mile Bicycle Loop and “Rio Grande

Vision” (creating connections to the river) described in the city’s *‘ABQ The Plan, 2012’* should promote healthier living by allowing greater access for biking, hiking, and walking (Albuq.). These proposed design endeavors open up greater potential for stronger connectivity between the BioPark, cultural institutions, neighborhoods, and recreational activities. These plans could also support more cultural events linked to the BioPark and environmental/community well-being.

Running along the western edge of all the BioPark sites is the “16-mile-long” paved Paseo del Bosque Trail or Riverside Bike Path, which is uninterrupted by roadways. This trail is also adjacent to the Rio Grande River and Rio Grande Valley State Park/open space. The Paseo del Bosque Trail has seven access points. Starting from north to south, these trailheads with off-street parking are Alameda Blvd., Paeso del Norte, Montano Rd., Campbell rd., Central Ave. NE, Marquez St., and Rio Bravo Blvd. (see pl. 7). Commercially, ten bicycle rental companies operate within the city and Sandia Mountains, yet none are close to the BioPark’s main trail (Paseo del Bosque) or Bike Blvd. (Mountain Rd.).

These trails systems provide excellent recreational opportunities for cycling, walking, and hiking. At present, there are no facilities for water-oriented recreation in relationship to the Rio Grande River and limited access for recreational equestrian links to this extensive network.

Through my analysis, I recommend the following:

- Develop more bus stops closer to the Paseo del Bosque Trail.
- Develop shaded rest stops and bike racks along the trail.
- Develop cultural experiences in environmental and historical learning along the trail.
- Develop greater access to the BioPark facilities along the trail.

- Develop additional recreational uses (passive & active) along the trail system.
- Develop aquifer recharge & bio-filter projects along the trail.
- Restore and integrate native wildlife habitat zones along the Paseo del Bosque Trail and Rio Grande Valley State Park/open space.
- Develop screening along the (N/E) edges of the site to focus users toward the river.
- Soften and naturalize edges along the Albuquerque Riverside Drain.
- Develop more and better wayfinding devices.
- Provide shaded rest areas, and eliminate excess paths into the Bosque.
- Develop stronger viewsheds and landmarks.
- Remove exotic/invasive vegetation.

Adjacent Land-Use to the BioPark

Land-use involves the modifying of the natural environment into man-made landscapes. Some urban and rural areas in the U.S. control community development by establishing an arrangement of land-use patterns into maps categorized by activities to better control growth through the local zoning board codes (Albuq.). The land-use adjacent to the BioPark is as follows:

Northern Boundary: mainly single-family residences with areas of agricultural use (color code also categorizes it as vacant or abandoned lands) and limited pockets of commercial use and multi-family residences. This area has recently experienced new housing developments within the last five years. Reginald F. Chavez Elementary School (public and institutional uses) is located along Mountain Road in this West Old Town neighborhood (see fig. 69). Central Avenue

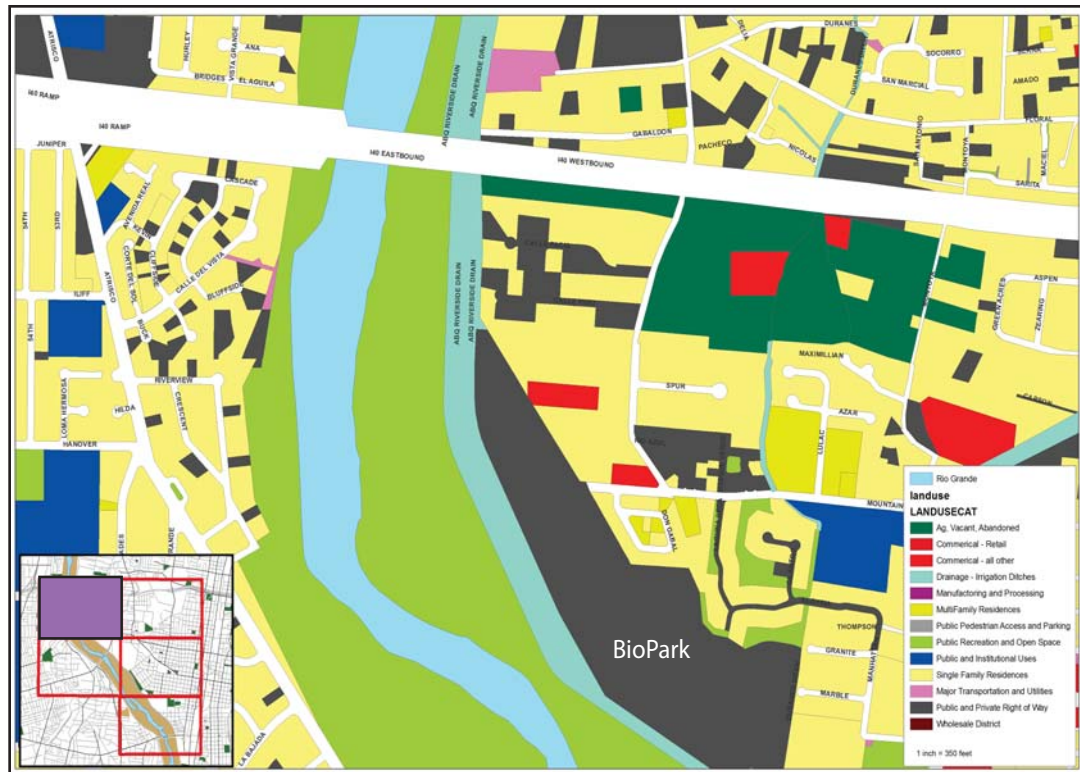


Fig. 69 Northern Boundary of the BioPark Land-Use Map (Albuq.)

has mainly commercial/retail land-use with scattered vacant properties and multi-family residences (see fig. 70 & 71).

Eastern Boundaries: mainly single-family residences in the Hunning Castle/ Country Club neighborhood with the Barelvas neighborhood mainly multi-family residences. The public recreation and open space in this area is occupied by the Albuquerque Country Club and golf course (Some maps designate this area as West Park). Television and radio stations zoned commercial run along Alcalde Place and Iron Avenue (see fig. 71).

Southern Boundaries: greatly varied with single-family and multi-family residences intertwined with commercial/retail land uses. The major commercial/retail uses in

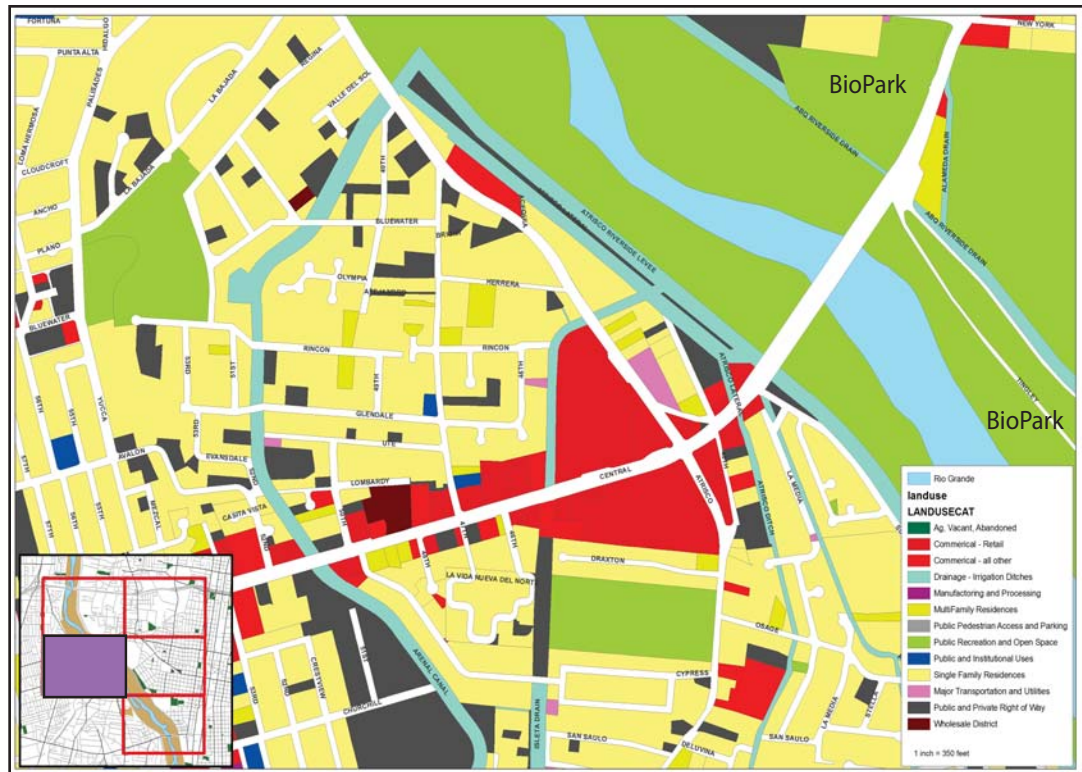


Fig. 70 Central Avenue Through the BioPark Land-Use Map (Albuq.)

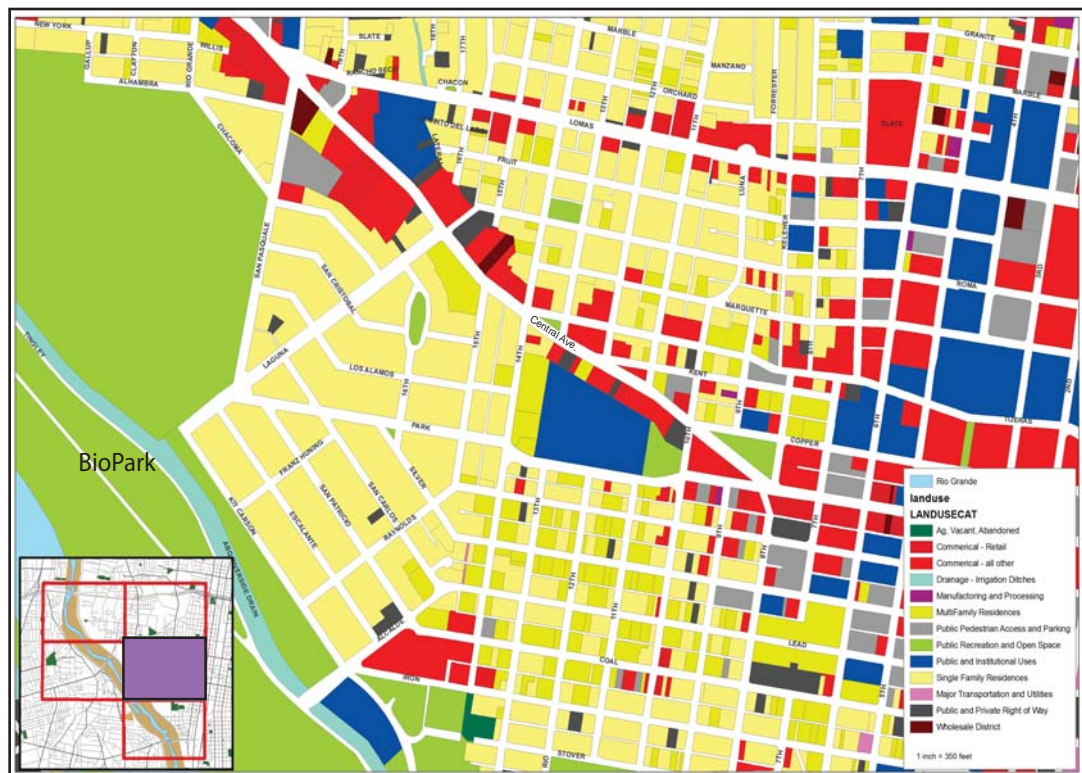


Fig. 71 Eastern Boundaries of the BioPark Land-Use Map (Albuq.)

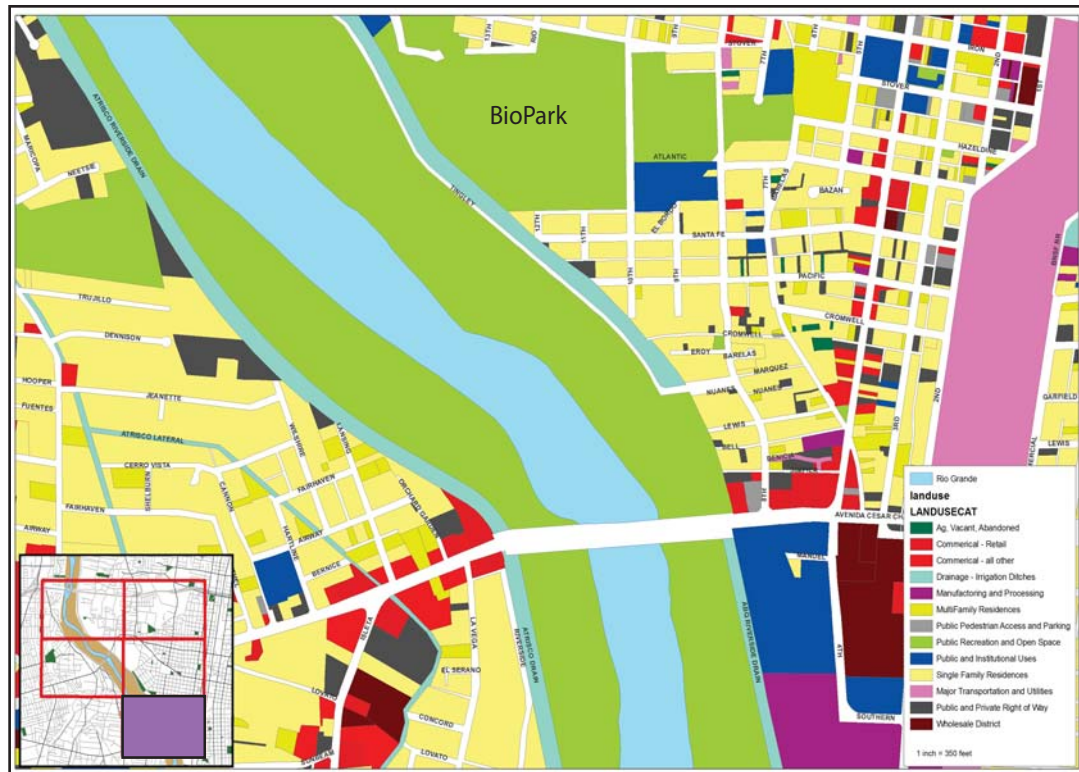


Fig. 72 Southern Boundary of the BioPark Land-Use Map (Albuq.)

this area are along 4th Street and Bridge Boulevard (see fig. 72). Public and institutional uses in this area are the Barelás Child Development Center, Dolores Gonzales Elementary School, and National Hispanic Cultural Center. Greatly impacting this area are the Santa Fe Railyards zone, major transportation, and utilities along 2nd Street, plus an extensive warehouse district along 4th Street.

Western Boundary: Rio Grande Valley State Park/Openspace (Rio Grande River and Bosque) (see figs. 69-72).

Through my analysis, I recommend the following:

- Acquire commercial/retail land use at the intersection of Central Avenue and New York Avenue eminent domain to create a more accessible and aesthetic

entry into the Botanical Park Area.

- Re-zone ABQ Riverside Drains and Alameda Drains as habitat and public recreation/openspace easements.

Environmental Conditions

Environmental conditions along and adjacent to the BioPark range from well-maintained properties to neglected, abandoned, and dump sites along the irrigation ditches. Environmental conditions of the river have already been discussed in chapters 1 and 2.

Through my analysis, I recommend the following:

- The city should work with property owners (Business & Residential) to clean up and repair visual eyesores along this prominent city facility (BioPark) for both residents and tourists.
- The city should work with the business community to increase occupancy and decrease vacant buildings in the area.
- The city should work the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA), MRGCD, Albuquerque/Bernalillo County Water Authority, and New Mexico State Parks to clean up the waterways and drains.

Public Art Program

The existing 1% for Public Arts Program will be a key component in weaving together history, culture, and nature along a proposed cultural corridor connecting to the BioPark and adjacent amenities. Over the past 35 years, this program has helped promote regional artists while creating a more visually and aesthetically

attractive community. Within a 3 mile +/- radius around the BioPark the 1% for Public Arts Program has over 90 pieces of art (See pl. 8 & 9). The BioPark presents an opportunity to showcase this highly successful program to even a greater extent.

Through my analysis, I recommend the following:

- Establish a non-profit organization to work with the city's Cultural Services Department to develop a visiting artist(s) program (see ch. 3).
- Develop a program to restore and rehabilitate vacant buildings along Central Avenue into artist studios, lofts, and galleries. This could begin with a restoration of the El Vado Motel right across from the Biological Park area.
- Develop a sculpture park to heighten awareness of public art and create a focused destination point for viewing the art installations.
- Develop interpretive nodes along the Rio Grande River that celebrate the arts of New Mexico.

Site Analysis Recommendations

The overall BioPark project site (4 miles along the Rio Grande River) has been broken down into five areas for the site inventory and analysis phase of this creative project: San Gabriel State Park, Biological Park, Country Club, Tingley Beach, and the Rio Grande Zoo (see pl. 18-22).

San Gabriel State Park:

In my assessment of the San Gabriel State Park area, I found that this property is an under-utilized resource. This area consists of mature Bosque, maintenance stockpiles and downsides, a fish hatchery, and a small playground surrounded by 12' tall chain-link fence. San Gabriel State Park can offer a strong

connection to Albuquerque's rural heritage (see pl. 18).

Through my analysis, I recommend the following:

- Provide stronger connections to the Rio Grande River, BioPark, open space, Rio Grande Nature Center, Museum Campus on Mountain Rd., and surrounding neighborhoods.
- Develop a recreational trail head for the Paseo del Bosque recreational trail.
- Clean up debris and vegetation.
- Reestablish and restore native habitat zones.
- Relocate West Old Town Park to allow greater access into the site.
- Redesign fencing strategies to visually open up the site and create a more inviting atmosphere.
- Develop a stronger connection to museums along Mountain Road.
- Develop an enrichment area to celebrate acequias and equestrian recreation and heritage.
- Provide more shade, improve trails, add rest areas, and eliminate excess paths.
- Develop stronger viewsheds

Biological Park:

The Biological Park Area is a rich socio-cultural “one-of-a-kind” special activity center. Stronger connectivity is needed in stitching the BioPark into its surrounding context (see pl. 19).

Through my analysis, I recommend the following:

- Provide stronger connections to the Rio Grande River, Route 66, Old Town,

and existing open space.

- Develop and enhance public experiences along the Rio Grande River and Central Avenue.
- Develop a more welcoming and accessible public entry plaza.
- Restore native habitat zones along the edges of the site.
- Provide a stronger buffer zone along the northern property line.
- Redesign fencing strategies to visually open up the site and create a more inviting atmosphere.
- Develop a stronger staging area for the Rio Line narrow gauge train.
- Provide more opportunities to provide shade.
- Develop an enrichment area to celebrate art and Route 66.
- Improve trails, add rest areas, and eliminate excess paths.
- Develop stronger viewsheds.

Country Club:

The Country Club Area provides a physical/green connection to the south campus of the BioPark, but is visually disjointed. On the east side of Tingley Drive is the lush over watered landscape of the West Park golf course, Albuquerque Country Club, and suburban ranch residences. On the west side of Tingley Drive is the dry and somewhat neglected landscape of the Rio Grande River/Bosque. Driving through this area one senses that the city has turned its back on the environmental system needs of this once glorious river to placate the insanity of the “*Leave it to Beaver*” lifestyle of the perfect manicured lawn. Tingley Beach is a well-loved recreational site and can be the lynchpin to a richer BioPark experience for its visitors. (see pl. 20).

Through my analysis, I recommend the following:

- Provide stronger connections to the Rio Grande River, BioPark, existing open space, and surrounding neighborhoods.
- Develop bus stops and wayfinding.
- Enhance native plantings along Tingley Drive to create a parkway.
- Develop aquifer recharge and bio-filter projects along the corridor.
- Restore and integrate native wildlife habitat zones.
- Control dust and sand erosion.
- Develop screening along the N/E edges of the site to focus users toward the river.
- Soften and naturalize lake edges.
- Develop enrichment areas to celebrate water, recreation, and public art/sculpture.
- Provide more shade around the lakes.
- Improve trails, add rest areas, and eliminate excess paths.
- Develop stronger viewsheds and landmarks.

Tingley Beach:

The Tingley Beach Area provides a physical/green connection to the south campus of the BioPark, but is under used and isolated. Once you have driven south of the Tingley Beach and Asian Station there is a sense that one may be lost and heading nowhere due to the lack of directional signage and the fact that you are driving on the “backside” of the Rio Grande Zoo. Visually speaking, this area has the greatest wayfinding and aesthetics issues. Yet, the rural landscape quality of this urban environment with its large expanses of open space, mature trees, adjacent pedestrian scale neighborhoods, and slower traffic can be an asset (see pl. 21).

Through my analysis, I recommend the following:

- Provide stronger connections to the Rio Grande River, open space, and surrounding neighborhoods.
- Develop bus stops and wayfinding.
- Enhance native plantings along Tingley Drive to create a parkway.
- Develop aquifer recharge and bio-filter projects along the corridor.
- Restore and integrate native wildlife habitat zones.
- Control dust and sand erosion.
- Soften and naturalize lake edges.
- Develop enrichment areas to celebrate water, recreation, public art/sculpture park, and community heritage.
- Provide more opportunities to provide shade.
- Improve trails, add rest areas, and eliminate excess paths.
- Develop stronger viewsheds to the river.

Rio Grande Zoo:

The Rio Grande Zoo Area has more than an 80-year relationship with the city as a valuable cultural resource. The zoo has developed with an internal orientation, not addressing its interface with the neighborhood or the Rio Grande River. Not only has this caused relationship problems with local residents, but it is also created wayfinding and aesthetics issues. Also, the Zoo's circulation link to the Biological Park is vicarious and disconnected due to its main entrance being located along 10th St. and surrounded by parking lots. Although with the narrow gauge Rio Line Train connection between these two BioPark facilities does help, more consideration with regard to circulation patterns is needed (see pl. 22).

Through my analysis, I recommend the following:

- Provide stronger connections to the Rio Grande River, existing open space, BioPark, National Hispanic Cultural Center, and the Santa Fe Rail Yards/ Rail Runner.
- Develop a secondary entry along the Rio Grande River.
- Develop bus stops and wayfinding.
- Develop aquifer recharge and bio-filter projects along the corridor.
- Develop and integrate new zoo exhibits to showcase New Mexico's wildlife.
- Develop enrichment areas to celebrate New Mexico wildlife, recreation, public art, and community heritage along the Rio Grande River corridor.
- Readdress existing entry into the zoo.
- Develop greater transitional buffers along the neighborhood and maintenance areas.
- Improve trails, add rest areas, and eliminate excess paths.
- Develop stronger viewsheds to the river.

During the evolution of this analysis process, I began to integrate the overlapping boundaries I found between contextual background, environmental conditions, infrastructure, landscape design theories, and my researched case studies directly related to the BioPark. In the following chapter the application of these findings are developed in conceptual drawings and designs for the BioPark.

Chapter 5 Planning and Design Recommendations

The inventory and analysis phase in chapter 4 of this creative project is a program-driven assessment of physical, biological, and cultural attributes of the BioPark and adjacent amenities. Creative problem-solving and the development of contextual design solutions and evolved from the process of integrating and synthesizing these findings.

During this process, I found the following:

1. Integration of the three major contextual elements--historical, cultural, and environmental--greatly influenced my design process/reasoning (see pl. 23).
2. Cultural pieces of the city and BioPark narratives can be brought closer together by “balancing” the pairings of opposites.
 - Past and Present.
 - Land and River.
 - Art (man-made construction) and Nature (environment).
 - Narrative (stories) and Setting (physical landscapes).
3. Stitching together two major elements (pieces) at the core of the city (Rio Grande River and the Albuquerque BioPark) can strengthen weave of the Albuquerque’s urban fabric (see fig. 73).

Goals, Objectives, and Programming

In addressing the design phase of this creative project, far-reaching goals were developed to reveal and reflect the natural and cultural heritage of Albuquerque

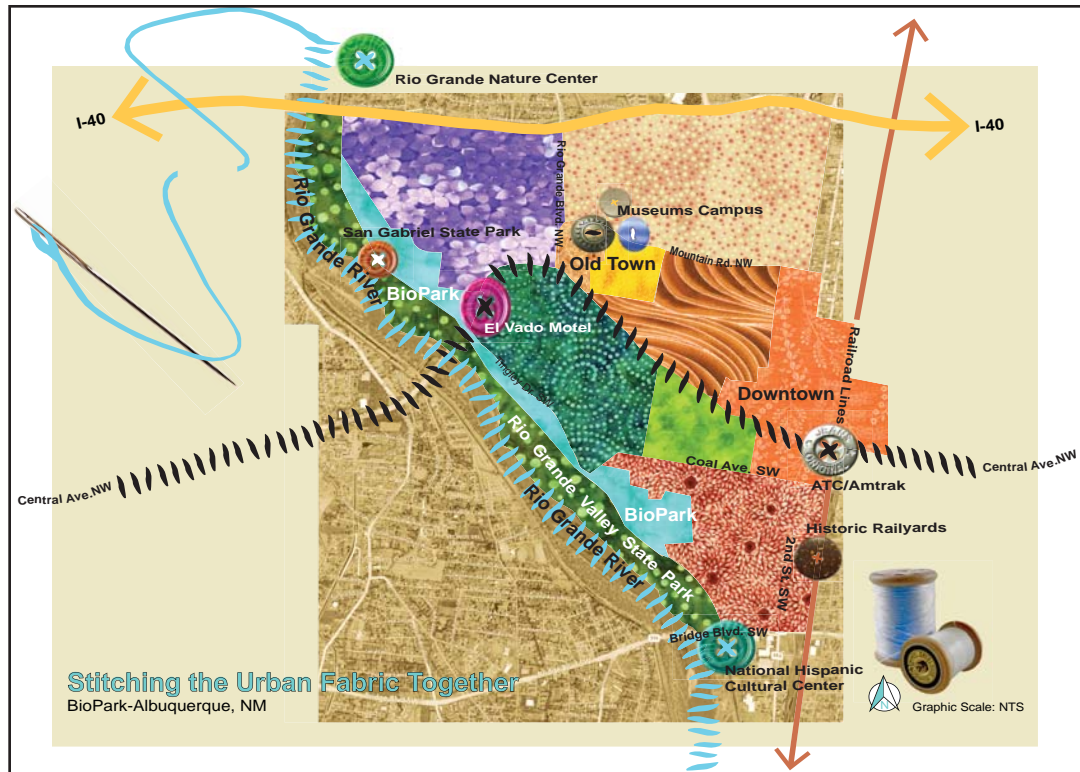


Fig. 73 Stitching the Urban Fabric Together Conceptual Diagram

and the Rio Grande River corridor. The goals then led to refined design objectives and programming elements for the development/enhancement of cultural facilities, environmental restoration, and civic amenities to improve the quality of life for Albuquerqueans and visitors to the city.

Goal 1: Facilitate interaction between Albuquerque's existing cultural elements.

Objective: Create physical connectivity and visual association(s) between surrounding amenities located within a 5-mile radius of the BioPark.

Programming:

- Develop bridges over the Rio Grande River at I-40, Central Avenue, and Bridge Blvd. as gateways/landmarks.
- Develop streetscape system as a connective loop.

- Develop a multi-modal cultural corridor within the limits of existing transit systems.
- Develop wayfinding system utilizing the 1% for Public Arts Program.
- Develop San Gabriel State Park as a recreational facilities hub.
- Utilize art to add color, composition, fun, landmarks, and whimsy to the landscape.
- Facilitate adventure, cultural/heritage, ecological, and educational tourism.
- Develop clear vehicular circulation between facilities.
- Redesign entries to the Biological Park and Rio Grande Zoo.
- Develop wayfinding to outlying facilities such as the Rio Grande Nature Center, National Hispanic Cultural Center, Museum Campus on Mountain Road, Downtown, Old Town, and ATC.
- Restore and redevelop the Albuquerque Rail Yards.

Goal 2: Celebrate the unique cultural and environmental heritage of Albuquerque, New Mexico, and the Southwest.

Objective: Create a visually rich, environmentally sustainable, cultural landscape and network.

Programming:

- Develop aesthetic enhancement of the landscape through public art and native plantings.
- Create a Folk Art Plaza as a new pedestrian entry for the Botanical Park.
- Develop a nonprofit organization to promote/facilitate regional artists, and establish an artists-in-residence program in collaboration with government agencies, educational institutions, and the business community.
- Develop promenades and interpretive nodes celebrating and educating the public about the historical, cultural, and environmental events/issues.

- Create viewsheds and lighting to frame the picturesque and monumental landscape elements, adding composition and orientation for users.
- Utilize low-impact/mobile facilities and infrastructure along the Rio Grande River corridor.

Goal 3: Facilitate interaction between the BioPark and the Rio Grande River.

Objective: Create a sustainable environmental and recreational corridor along the river from the I-40 bridge (north) to the Bridge Street bridge (south).

Programming:

- Develop physical connectivity and visual association between the Rio Grande River and the BioPark facilities.
- Develop a landscape that celebrates the river.
- Remove existing barriers between the river and the BioPark.
- Create pedestrian-oriented entries into the BioPark along the river corridor.
- Create new recreational trails.
- Eliminate excess and unofficial trails within the Bosque and along the Albuquerque Riverside Drain through habitat restoration plantings/projects.
- Develop a controlled interface between the river and the residents utilizing more aesthetically pleasing natural circulation controls.
- Establish police patrols (utilizing bicycles and horses) and substations along the corridor.
- Develop a Rio Grande River restoration program and nonprofit organization to interact with government agencies, educational institutions, and the business community.
- Create green corridors and demonstration areas utilizing new technologies and landscape designs that promote environmentally sound water use

practices and a healthier river for wildlife and Albuquerqueans.

- Utilize art to add color, composition, fun, landmarks, and whimsy to the landscape.

Goal 4: Promote healthier living, economic growth, and enjoyment of nature and community in Albuquerque.

Objective: Create opportunities for social interaction, recreation, and education.

Programming:

- Develop promenades and interpretive nodes celebrating and educating the public about the historical, cultural, and environmental events/issues.
- Create new outdoor recreational facilities and opportunities.
- Create neighborhood/pedestrian entries to the recreational trails.
- Develop a BioPark recreational program with government agencies, educational institutions, and the business community.
- Create new recreational trails oriented to the Rio Grande River.
- Develop wayfinding to outlying facilities such as the Rio Grande Nature Center.
- Develop rest areas that provide shade, food/water, aesthetic views, and a sense of security along the recreational trails.
- Utilize art to add color, composition, fun, landmarks, and whimsy to the landscape.
- Facilitate adventure, cultural/heritage, ecological, and educational tourism.

Master Planning

During the master planning phase of this creative project, it was necessary to design utilizing multiple scales: the Cultural corridor network master plan at 1"=2000' scale, the 4-mile Rio Grande River corridor/BioPark area master plans at 1"=300' scale (San Gabriel State Park, Biological Park, Country Club, Tingley Beach, and the Rio Grande Zoo), and sections at varying scales (see pl. 24 - 30).

Before beginning the cultural corridor network master planning phase (1"=2000'), it was important to address the constraints and opportunities within the selected 5-mile radius of the BioPark (see pl. 24).

Constraints:

- Lack of connectivity between the Rio Grande River, open space, BioPark, National Hispanic Cultural Center, Santa Fe Rail Yards/Rail Runner, Downtown, and Old Town
- Physical & visual barriers separating the BioPark and the city from the Rio Grande River
- Unclear circulation patterns
- Vacant and neglected properties

Opportunities:

- BioPark's proximity to the Rio Grande River and its environmental corridor/open space
- BioPark's well-maintained and positive established public identity
- BioPark's proximity to the Rio Grande River, open space, National Hispanic Cultural Center, Santa Fe Rail Yards/Rail Runner, Downtown, and Old Town
- Need to restore historic buildings along Route 66 and the native landscapes of the Rio Grande River
- Well-established mass-transit system

The master plan was developed to promote greater connectivity between cultural facilities around spaces that celebrate historical, cultural, and environmental narratives and settings/landscapes (see pl. 24).

Recommendations:

- Create a native New Mexico wildlife habitat and botanical garden along the

Rio Grande River by extending the Rio Grande Zoo exhibits.

- Reorient the Rio Grande Zoo toward the river by establishing a new main entry and plaza along Tingley Drive.
- Create a pedestrian-oriented Folk Art Plaza and entry into the Biological Park along Central Avenue.
- Restore and redevelop the Albuquerque Rail Yards along 2nd Street SW as cultural museum, housing, business incubator, and mini-parks.
- Zone areas for wildlife restoration, and control human activity by creating observational/interpretive nodes.
- Create pedestrian plazas/entries along the Rio Grande River into the existing Zoo Park and Biological Park Festival Green area, and connect these new entries with promenade access to the river.
- Restore and develop El Vado Motel into a visiting artists/public art center.
- Create a pedestrian corridor along the Alameda Drain to connect the Arts Center with the new Public Art Park.
- Create a cultural corridor system as a connective loop between existing cultural facilities with enhanced pedestrian and mass transit streetscape.

The circulation pattern would run as follows starting at the Biological Park:

Central Avenue SW heading southwest; turning left onto Tingley Drive SW running along the Rio Grande River corridor to Marquez Lane SW; right onto 8th Street SW heading south; left onto Bridge Boulevard SW heading east; left onto 2nd Street SW heading north; Downtown jogging right one block to connect with the ATC; jogging back left onto 2th street heading north; left onto Mountain Road heading west; left onto Rio Grande Boulevard NW heading south; and right onto Central Avenue heading west (estimated 8-mile loop).

- Design enhancement areas to create celebratory spaces that become social landmarks.
- Acquire San Gabriel State Park (80+/- acre) to develop as a recreational facility hub.
- Create wayfinding along the new cultural corridors and Rio Grande Blvd. to I-40.

Conceptual Diagrams and Drawings

During the conceptual design development phase of this creative project, the BioPark site was broken down into five distinctive areas: San Gabriel State Park, Biological Park, Country Club, Tingley Beach, and Rio Grande Zoo. These areas were programmed utilizing guidelines from the built/architectural methods of Alexander's pattern languages, the urban geography methods of Kevin Lynch, and the current landscape methodologies of placemaking (see ch. 1 & 2). The design approach was to activate a unique cultural and social experience for users within these areas/node while at the same time having contextual design elements/patterns that holistically stitch together the 4-mile corridor. Overarching recommendations established in the inventory and analysis phase of the project (see ch. 4) were followed to create the final designs for these areas. To explain the design, we will begin north, following the Rio Grande River corridor south (see pl. 26-36).

Note: This conceptual phase was developed as a master planning/concept(s) generating stage and will need further design refinement in the construction development phase.

San Gabriel State Park Area Master Plan:

Working with state governmental agencies, the city of Albuquerque will negotiate the transfer of these 80 +/- acres currently known as San Gabriel State Park. The new San Gabriel Park will be incorporated into the BioPark and redevelopment as a recreational hub that celebrates the narrative interface between the Rio Grande River, rural landscape, and the urban edge (see pl. 26 & 34).

The concept framework includes circulation patterns and balanced pairings as demonstrated in the San Gabriel Park conceptual design diagram (see fig. 74).

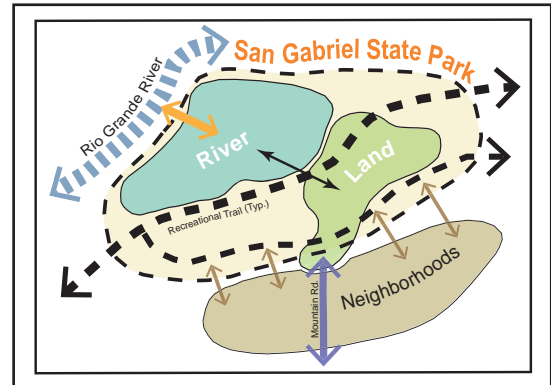


Fig. 74 San Gabriel Park Conceptual Design Diagram

Design components are as follows:

- Recreational Hub: The architecture for the new Cycling and Boating Centers will follow sustainable low-impact practices and be constructed along LEED's Platinum Rating guidelines, have a low profile in the landscape, and be distinctive to the context of the place.
 - Cycling Center: Modeled/programmed after the Community Cycling Center--Portland, OR; McDonald's Cycle Center-Millennium--Chicago, IL.; and Northern Sonoma County--Healdsburg, CA. Estimated building footprint 2,500-3,500 square feet for rental bikes, bike repair workshop, maps/local information, changing rooms, restrooms, small restaurant, classrooms, and bicycle police substation. In addition to this facility, designated areas will have Bikeshare stations modeled after the

Washington DC system.

- Boating Center: Modeled/programmed after the Emerald Necklace-- Boston, MA and Atlanta's Chattahoochee River--Atlanta, GA. Estimated building footprint 2,500-3,500 square feet of canoe/kayak rentals, classrooms, sand beach, maps/local information, changing rooms, restrooms, small restaurant, classrooms, and water safety patrol station/pier.

Note: The Army Corps of Engineers, city of Albuquerque water agencies, and all State/Federal agencies controlling the Rio Grande River will be consulted to establish design guidelines.

- Beach and Boating Bay: Small protected harbor that acts as a water trailhead and outdoor classroom.
- Art Jetty: Functional protective landform design as an artistic peninsula for the future connection across the Rio Grande River and to shelter the boating bay.
- Mountain Road Gateway: Visual terminus and landmark into the northern edge of the BioPark. This new entry shall celebrate the rural and river heritage while being visually open and inviting.
- Mounted Horse Patrol Center: Modeled/programmed guidelines will be established by the state and city police departments.
- Wetland Educational Garden: Transitional landscape between Boating Center and Cycling Center that acts as an axial terminus. Design elements will consist of riparian habitat, native wetland plantings, boardwalks, small

shaded seating areas, a public art landmark feature, and interpretive/educational signage.

Biological Park Area Master Plan:

Working with the city of Albuquerque and the Biological Park staff, the eastern and southern boundaries will be redeveloped as cultural corridors that celebrate the narrative interface between the Rio Grande River, Route 66, and regional art (see pl. 27 & 32).

The concept framework includes circulation patterns and balanced pairings as demonstrated in the Biological Park conceptual design diagram (see fig. 75).

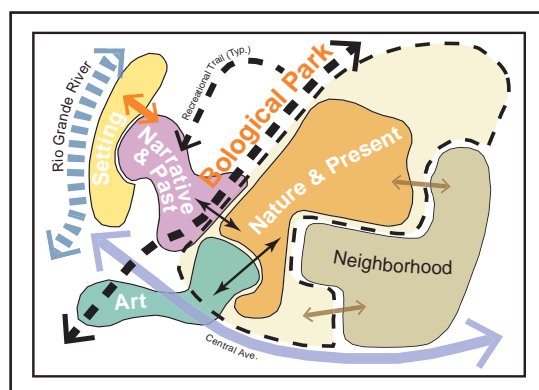


Fig. 75 Biological Park Conceptual Design Diagram

Design components are as follows:

- New Mexico Historical Narrative Promenade: This pedestrian strolling boulevard will follow sustainable low-impact practices and be constructed along LEED's Platinum Rating guidelines, have a low profile in the landscape, and be distinctive o the context of the place.
- Sculptural Interpretive Narrative Stations: Theses information stations follow seven major tales (outlined in ch. 2) of memory and journey through the human timeline of the New Mexico landscape: water, gold, adventure, scenic beauty, well-being, technology, and enticement of the place. To allow for future expansion of this cultural narrative trail , additional room has been allocated for more stations over time.

- New Pedestrian River Entry into the Biological Park: Transitional landscape acting as a physical and metaphorical connective link from the Biological Park to the new Rio Grande River Plaza and Camera Obscura while allowing greater access for visitors.
- Riparian Botanical Garden: This area was designed as a new native botanical garden exhibit celebrating the river ecology that provides an interpretive educational narrative/outdoor classroom while restoring habitat along the Rio Grande River. This garden will act as a demonstration lab and seed bank for the future restoration of the river corridor.
- New Pedestrian Plaza and Entry: This new focal point along Route 66 celebrates the regional folk art of New Mexico, increases community interaction with the BioPark, and acts as a gateway/platform to facilitate the greater development of regional art and environmental studies.
 - New Arts and Environment Center: The architecture for the new building will follow sustainable low-impact practices and be constructed along LEED's Platinum Rating guidelines while working with the contextual design of existing buildings. Acting as a visual terminus to the Tingley Drive entry of the Botanical Park, this new building will also function as both a gateway and buffer from Central Avenue into the botanical gardens, facilitate the studies of art and the environment, create a plaza for the Rio Line Train, and provide shaded outdoor courtyard galleries. The design is modeled/programmed after the Torpedo Factory Art Center--Alexandria, VA. The estimated building footprint of 30,000-50,000 square feet will hold studios, classrooms,

new non-profit environmental organization headquarters, research labs, topical book store, galleries, restaurant, etc.

- Folk Art Carousel: Modeled after the Lincoln Park Zoo Carousel (Size 52' dia. and 30,000 lbs.) and accommodating up to 50 riders, this carousel will utilize the region's iconic artistic palette and folk art (e.g. New Mexico flora and fauna themed wood carving, tile, tin work, wrought-iron, landscape paintings, painted glass work, etc.). Carousel housing will be modeled after the work of the architectural firm of SHoP/Sharples Holden Pasquarelli. (Consultants-NM Art Museums and the Art Community)
- Rio Line Garden Depot Plaza: Shifting the orientation of the existing Garden Depot, this plaza will be detailed to celebrate trains of the Southwest.
- El Vado Motel's Artists-in-Residents Program: This historic 1937, 32 unit auto court motel will be restored and repurposed for the new visiting artist-in-residence program and a new non-profit art organization/coalition headquarters. Working with the University of New Mexico, the city of Albuquerque, and local art galleries/museums, this adaptive reuse of a historic Route 66 motel will serve as a case study for future redevelopment of historic auto court motels along Central Avenue.
- New Biological Street: This new parkway will run parallel to Central Avenue. Entering from the Tingley Drive entrance, it will meander (to slow traffic) through a native materials landscape terminating at the existing New York St. parking lot. This streetscape will act as a forecourt native botanical

garden and circulation drop off spine. All buses will be restricted to the New York Street entrance.

- **Central Avenue Gateway:** The city of Albuquerque will purchase the existing commercial business on the northwest corner of Central Avenue SW and New York Street NW to create a western gateway into the city along Route 66. This transitional landscape will promote greater interaction between the new Art and Environmental Center and restored El Vado Motel, plus provide a neighborhood park/future trailhead for the Alameda Drain trail. The existing Biological Park parking lot on New York Street NW will be redesigned into two parking lots. The major public access parking lot will circulate from the western Tingley Drive entrance. The second parking lot entrance will be along New York Street, accommodating maintenance, staff, and bus parking.

County Club Area Master Plan:

Working with the city of Albuquerque and the Biological Park staff, the existing Tingley Beach facilities along the Albuquerque Country Club will be enhanced by the addition of the Public Art Park & Galleries, a connective promenade between the Asian Station and new fishing pier, and new neighborhood pedestrian crossings. This new development will celebrate the narrative interface between the Rio Grande River, recreation, and public art (see pl. 28 & 33).

The concept framework includes circulation patterns and balanced pairings as demonstrated in the Country Club

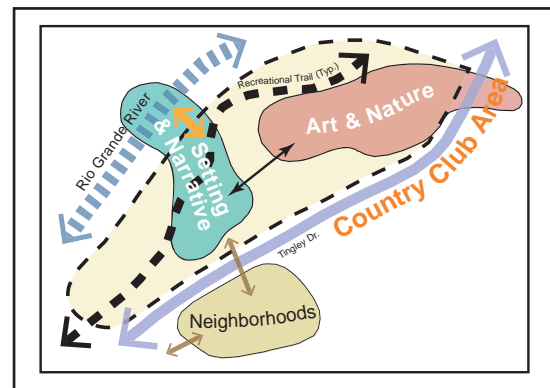


Fig. 76 Country Club Conceptual Design Diagram

conceptual design diagram (see fig. 76).

Design components are as follows:

- **Public Art Park & Gallery Building:** Modeled/programmed after the Cultural Corridor--Indianapolis, IN; the National Gallery of Art Sculpture Garden--Washington, D.C; and the Indianapolis Museum of Art/Virginia B. Fairbanks Art & Nature Park---Indianapolis, IN. The galleries building will follow sustainable low-impact practices and be constructed along LEED's Platinum Rating guidelines, have a low profile in the landscape, and be distinctive to the context of the place. The estimated building footprint of 3,000-3,500 square feet will house galleries, a small restaurant, consignment retail store for local artists, restrooms, and bookstore. The gallery building and landmark water sculpture are designed to act as a axial terminus for the existing Tingley Beach Lakes northern viewshed.

Note: The existing Rio Line Train and Paseo Del Bosque Trail will be realigned (from the Central Avenue bridge crossing to the Asian Station) to provide greater visual connection to the Rio Grande River, accommodate the new Public Art Park, and create an easement for new parking & a vehicular circulation loop.

- **Alameda Drain Art Trail:** Working with the city of Albuquerque, Biological Park staff, the Middle Rio Grande Conservancy District (MRGCD), and the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA), the connecting Alameda Drain from Central Avenue SW to the Albuquerque Riverside Drain will be redeveloped as a demonstration project showing adaptive multi-purposing of the historical ditch irrigation system. This corridor will create a pedestrian/recreational trail that links the Biological

Park, El Vado Motel, and Tingley Beach.

- **Rio Grande Fishing Pier and River Promenade:** This pedestrian strolling boulevard will follow sustainable low-impact practices and be constructed along LEED's Platinum Rating guidelines, have a low profile in the landscape, and be distinctive to the context of the place. This promenade will allow fishermen, naturalists, and visitors to connect with the Rio Grande River while providing a greater control platform to interface with the river. Design elements will include an elevated boardwalk, small shaded seating areas, a public art landmark feature, riparian habitat, native wetland plantings, interpretive/educational signage, etc. The connecting node between the Asian Station and River Promenade is the new Rio Line Train Plaza, the second stop, designed to celebrate the trains of the Southwest on the rail heritage trail.
- **Kit Carson Park Connection:** This second pedestrian trail crossing connects the northern end of Kit Carson Park and the surrounding neighborhoods with the Paseo Del Bosque Trail, Rio Grande River, and new cultural corridor mass-transit loop. Design elements for this gateway designed detailed to celebrate the history of the Hunning Castle/Country Club neighborhood.
- **Tingley Beach Lakes:** Enhancement will consist of naturalized riparian plantings, reorganization of two consolidated picnic areas, periodic shade structures, fishing and bird watching areas along the water's edge, greater native landscape plantings, and songbird habitat along the lakes and on the island.

Tingley Beach Area Master Plan:

Working with the city of Albuquerque and the Biological Park staff, the southern boundary of Tingley Beach will be redeveloped as a cultural gateway that celebrates the narrative interface between the Rio Grande River and heritage of the Baretas and Raynolds Addition neighborhoods (see pl. 29 & 35).

The concept framework includes circulation patterns and balanced pairings as demonstrated in the Tingley Beach conceptual design diagram (see fig. 77).

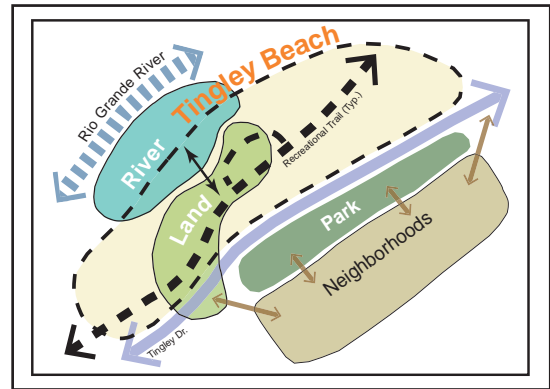


Fig. 77 Tingley Beach Conceptual Design Diagram

Design components are as follows:

- **Rio Grande Habitat Plaza:** Working with the New Mexico Department of Fish and Game and the Biological Park staff, this existing Silvery Minnow Refugium will be redeveloped as an interpretive educational hub. Design elements will consist of habitat restoration, native wetland plantings, boardwalks/controlled circulation paths, an outdoor classroom, bike racks, public art landmark features, small shaded seating areas, and interpretive/educational signage.
- **Alcalde Place Crossing and New Bus Stops:** This third pedestrian trail crossing connects the southern end of Kit Carson Park and the surrounding neighborhoods with the Paseo Del Bosque Trail, Rio Grande River, and new cultural corridor mass-transit loop. Design elements for this gateway celebrate the history of the acequias.

Rio Grande Zoo Area Master Plan:

Working with the city of Albuquerque, federal/state agencies, Rio Grande Zoo staff, and the surrounding neighborhoods, the existing facilities will be enhanced by the interfaces between the Rio Grande River--Rio Grande Zoo and the Rio Grande Zoo--Barelas neighborhood (see pl. 30 & 36).

The concept framework includes circulation patterns and balanced pairings as demonstrated in the Rio Grande Zoo conceptual design diagram (see fig. 78).

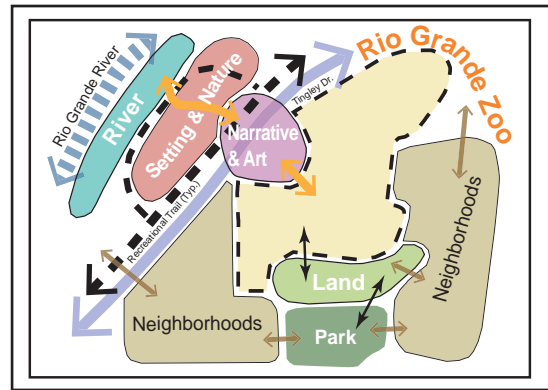


Fig. 78 Rio Grande Zoo Conceptual Design Diagram

Design components are as follows:

- New Mexico's Oasis Park--Zoo and Botanical Gardens: Modeled/programmed after the Missouri Botanical Garden--St. Louis, MO and Arizona-Sonora Desert Museum--Tucson, AZ, this new facility will offer residents a true glimpse into the rich but dwindling habitat of the Rio Grande River Basin. Working with specialists in flora and fauna restoration, this new exhibit will unite a greater partnership between the staffs of the BioPark and showcase their talents. As a demonstration laboratory, this new facility will provide restoration stock for native plant species while also offering a breeding program for wildlife to release back into native populations. Design elements include naturalized New Mexico wildlife exhibits, New Mexico botanical gardens, distinctive landforms, surrounding habitat restoration, naturalized trails/controlled circulation paths, an outdoor classroom, bike racks, public art landmark features, small shaded seating areas, framed

viewsheds, interpretive/educational signage, etc. Enhancing the sense of timelessness along the banks of the Rio Grande River, built structures will be consolidated along Tingley Drive to provide both a gateway and buffer from modernity.

- **New Museum of the Rio Grande River:** The architecture for this new building will follow sustainable low-impact practices and be constructed along LEED's Platinum Rating guidelines. Working with the contextual design of existing buildings, this new museum celebrate the beauty of the river in both form and environmental functions. Acting as a visual gateway, landmark, and terminus to the Rio Grande Zoo and BioPark, the museum will showcase the living environmental systems of the Rio Grande River. The estimated building footprint of 20,000-40,000 square feet will house exhibits, classrooms, new non-profit river-keepers organization headquarters, research labs, topical bookstore, galleries, a restaurant, restrooms, police sub-station, etc.
- **River Plaza and Zoo Entry:** This new focal point along the Rio Grande River was designed to celebrate New Mexico and the Rio Grande River Basin, increase community interaction with the BioPark, and act as a gateway/platform to facilitate the greater development of regional environmental studies. This transitional landscape will allow greater access for visitors.
- **River Promenade:** This pedestrian strolling boulevard will follow sustainable low-impact practices and be constructed along LEED's Platinum Rating guidelines, have a low profile in the landscape, and be distinctive to the geological context of the place.

- Sculptural Interpretive Narrative Stations: These information stations follow the course of the Rio Grande River both geologically, physically, environmental, and culturally as it journeys through the landscapes of Colorado, New Mexico, Texas, and Mexico to the Gulf of Mexico. The concept is modeled/programmed after the Mud Island River Park/Riverwalk Fountain--Memphis, TN. It provides a physical and metaphorical connective link from the Rio Grande Zoo bandshell to the new Waterfront Plaza and Camera Obscura.
- New Neighborhood Parks and Greenspace: The city of Albuquerque will purchase/repurpose three properties--the vacant lot on the northeast corner of 11th Street SW and Silver Avenue SW, the northeast corner of 10th Street SW and Silver Avenue SW, and the cul-de-sac terminus of Pacific Avenue SW--create two neighborhood parks and a greenspace .
- Tingley Drive Southern Gateway: This fourth pedestrian trail crossing connects the Baretas neighborhood with the Paseo Del Bosque Trail, Rio Grande River, and new cultural corridor mass-transit loop. Design elements for this gateway will celebrate the river.

General Overall Design: To promote greater cohesion between the five designated BioPark areas in this creative project the subsequent overarching design principles were followed:

- Trails: Informal trails along the Rio Grande River, Bosque, and the Albuquerque Riverside Drain will be removed and restored to native vegetation. New trails will follow standards set by the American Trails

organization, ADA, and the NPS.

- **Rest and Picnic Areas:** These facilities will follow sustainable low-impact practices and be constructed along LEED's guidelines. These areas will be modeled/programmed after the green/mobile facilities practices of Phoenix Zoo--Phoenix, AZ and Assateague Island National Seashore--MD, VA and design firms such as SHoP/Sharples Holden Pasquarelli, Three Rivers EcoBuilders, Jay Shafer, and Jägnefält Milton. Design elements will provide shade, seating and tables, food (mobile vendors), water, low-level lighting, green restrooms, compost & recycling bins, emergency call boxes, bike racks, en plein air (open-air art) studios, solar energy, and aquifer recharge stations, etc. Designed detail of these areas will celebrate interfaces between past & present, land & river, art & nature, and narrative & setting.
- **Barriers and Fencing:** All existing chain-link fence will be removed from the BioPark. New fencing will be constructed from local/regional materials, be visually discrete in naturalized areas, be detailed to celebrate specific themes in high-traffic areas, and utilize "ha-ha" walls in areas protecting habitat.
- **Crossings over the Albuquerque Riverside Drain:** Working with the city of Albuquerque, Biological Park staff, the Middle Rio Grande Conservancy District (MRGCD), and the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA), six new crossings will be designed over the Albuquerque Riverside Drain to create a naturalized setting.
- **Viewsheds:** Following guidelines and/or concepts established, created, or

identified by the city of Albuquerque, local artists, and BioPark staff, will viewsheds will artistically frame the picture planes to celebrate the Rio Grande River, Sandia & Manzano Mountain ranges, the volcanoes, and scenic views throughout the BioPark.

- **Habitat Restoration:** Following guidelines established by the city of Albuquerque, Biological Park staff, the Middle Rio Grande Conservancy District (MRGCD), the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA), and habitat restoration specialists, three major native types of vegetative cover (see ch. 2 & 4) will be restored along the Rio Grande River corridor, Albuquerque Riverside Drain, and as indicated in the master plans.
- **New Bus Stops:** Following guidelines and/or concepts established by the city of Albuquerque, ABQ Ride buses, Amtrak/Southwest Chief Line, RapidRide semi-BRT Service (Buses), Greyhound, and the New Mexico Rail Runner Express, new bus stops will be located along the new cultural corridor system (see p. 132). Design elements will provide shade, online access, emergency call boxes, protection from the weather, and design detailing from local artists and the new artist-in-residence program.
- **Transitional, Gateway, and Screening Landscapes:** All areas located in the five area master plans will be screened using xeric plantings.

Project Phasing

Due to the complexity and scale of this creative project, I recommend the city of Albuquerque follow an approach of pairing design development elements

over an estimated course of 15-25 years and a 1/4 tax/ revenue source (see pl. 31). In the overall construction of this creative project I recommend nine project phases as follows:

1. Biological Park Enhancements & Folk Art Plaza
2. Public Art Park
3. San Gabriel Park Recreational Hub
4. Rio Grande Zoo Enhancement & New Mexico's Oasis Park
5. New Mexico Historical Narrative Promenade & Biological Park River Entry
6. Rio Grande Fishing Pier & River Promenade
7. Rio Grande Habitat Plaza & Alcalde Place Crossing
8. ABQ Rail Yards (Redevelopment Project is outside the scope of this project)
9. New National Hispanic Cultural Center Bus Stops Streetscape System & New Museum Bus Stops Streetscape System.

Note: The following construction and restoration projects will run simultaneously alongside all proposed construction phases and will need to be coordinated. The Cultural Corridor Streetscape and the habitat restoration of the Rio Grande River Corridor will need additional phasing plans developed.

- 1-9 New Cultural Corridor Streetscape System
- 1-9 Habitat Restoration Rio Grande River Corridor

The phasing plan depends on adequate funding and governmental/agency approvals. As time progresses it may be necessary to update the detailed design development.

Chapter 6 Conclusion

The experience of carrying out this creative project began by returning to a place that I found fascinating, a place I once called home, a place with layers of intriguing narratives. On a sunny November day, I walked around Albuquerque experiencing the sights, looking at patterns, and studying pieces of its urban fabric. I discovered that I was attracted to pairings of opposites juxtaposed in the city's landscape. I found that I was also drawn to the intersection of the Rio Grande River and the Albuquerque BioPark.

In formulating my proposal, I began to think about Albuquerque's great opportunity to weave into its future an urban fabric that celebrates the mystique of the West, the dusty romance of the trail, the quirky allure of roadside kitsch, and the potential to entice passengers to travel the railways again. I decided to design/craft a landscape that would create memories throughout a lifetime of journey(s) along the BioPark's section of the Rio Grande River corridor.

To achieve my goals, I explored Albuquerque's physical and cultural history through the lenses of landscape, architectural, and placemaking theory. The process included investigation into the site's environmental conditions, identification of past and current problems of the area, and responded to the unique blend of cultural and environmental qualities found to determine design directions for the BioPark. The following questions guided this process:

1. How can Lynchian design principles help fill a cultural void in Albuquerque's urban fabric?
2. How can landmarks enhance existing cultural corridors (Route 66, Rio Grande River, Mountain Rd., Rio Grande Blvd., 2nd St., and El Camino Real)?

My final recommendations are successful in a number of ways. The application of Lynchian design principles in the inventory and analysis phases, and the use of these in the development of design concepts present a strong framework for wayfinding, celebration of the area's cultural history, and recognizes current plans and trends in Albuquerque. An integrated approach to the analysis of New Mexico and Albuquerque landscapes in relationship to Pottleiger's concepts of landscape narrative provided a an in-depth look at this region, contributing considerably to this process.. The pairing of opposite, but complementary aspects of different locations in the Albuquerque landscape added additional layers of form, structure, and meaning to the master planning process (see p. 126). Additionally, the environmental investigation and treatment recommendations not only provide an appropriate backdrop for the development decisions, they solve key environmental problems faced by the city.

This project presented several challenges that led to the proposed solution. First, 43% Albuquerque's current population is not native to New Mexico. This reinforced the need to provide a visual timeline of New Mexico and to represent Albuquerque's story in a strong fashion. Second, balancing the economic demands of tourism with community needs required a design direction that integrated resident and visitor wishes while ensuring the use of space maintained appropriate boundaries. The proposed solution integrates the built/architectural

methods of Alexander's pattern languages, the urban geography methods of Kevin Lynch, and the current landscape methodologies of placemaking to develop a more comprehensive and current application in designing a cultural corridor and creating social landmarks. Third, Albuquerque's development goals are comprehensive. Integrating the concepts and directions they have developed and enhancing their direction necessitated an in-depth investigation into the cultural history, environmental problems, and successful case studies for guidance. All of these challenges were considered and weighed against one-another throughout the process of planning and design for this project, resulting in proposed directions that are both nuanced and sophisticated to achieve a strong sense of place.

All projects, no matter how successful, have limitations. In this case certain challenges could not be met, primarily due to time constraints. While some consultation with stakeholders and governmental agencies was undertaken, this was limited. The mix of cultural, environmental, and water rights issues facing Albuquerque is extremely complex, and the integration of tourism and challenges related to the economic opportunities increases the need to work closely with experts from a number of fields. To accomplish this, I recommend including various interest groups in conversations about the proposed solutions, including governmental agencies, environmental specialists, artists, artist organizations, residents, and tourists. Engaging these constituents in focus groups and workshops would unearth additional problems and opportunities my study did not find, and would likely result in greater acceptance of proposed directions and changes.

Though there are limitations with this project -- Albuquerque BioPark: Creating Cultural Corridors and Social Landmarks in the Landscape -- the results

are still compelling. It was developed to align with the city of Albuquerque's future development directives while at the same time adding artistic embellishments, creating connectivity, restoring fragile ecologies, and infusing elements of composition into the theme randomly evolved landscape. With governmental endorsement, grassroots public involvement, new non-profit organizations, public-private funding, a strong interdisciplinary design team, and 15-25 years of hard work, this creative project could become a reality. The city of Albuquerque has an opportunity to offer its residents, visitors, and the environment an enlightened vision that will add enchantment to the life of the city.

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